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ORIGINAL ARTICLES.

ON LEAD-PALSY IN CHILDREN; WITH A REPORT OF THREE CASES.[1]

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A CAREFUL search through current literature and the text-books shows great paucity of material in regard to plumbism in young children. In an admirable and thorough article on lead-poisoning, James J. Putnam[2] remarks that the justification for his article "is found not in the abundance but in the meagerness of the present accumulation of facts relating to children, and the importance of taking steps toward increasing it." I have been able to find no other cases besides those which Dr. Putnam has quoted in the complete table which he has added to his paper.

Wilson, in *Pepper's System of Medicine*,[3] says: "Lead-poisoning is an affection of adult life. Of 102 cases, two only occurred in individuals below twenty years of age."

D. D. Stewart, of Philadelphia, whose article on poisoning by buns colored with chrome-yellow attracted so much attention a few years ago, writes me that he made a thorough search through the literature of lead-poisoning when investigating these cases, and made notes of all nervous cases, especially those with brain-symptoms. He found many cases of cerebral disorders, like convulsions, which occurred in children, but none of paralysis. He also remarks that in German literature there are a number of accounts of whole families being poisoned by lead, through working and living in the potteries; but there are no records of palsies in children among these cases, though paralyses in the adults are common; and it was related that the children had headache and convulsions.

Among Stewart's cases of chronic lead-poisoning from eating the chrome-yellow buns, seventy-nine in number, there were many children. These were especially affected with convulsions, but there were no cases of wrist-drop or other palsies among them.

There is apparently no reason why children should not be as susceptible to lead-poisoning as adults. Children are as much exposed to the dangers of lead-poisoning, except in those cases which occur among workers in lead—as, for instance, painters, manufacturers of white lead, and those employed in potteries.

There are many cases on record in which children of various ages have been seriously poisoned by the absorption of lead into the system. On the other hand, in epidemics of lead-poisoning from drinking-water, the proportion of cases in children is small. In the epidemic which occurred at Tredegar, England, reported by Dr. Brown, and quoted by Putnam, there were no serious symptoms in any person under eighteen years of age among fifty-two cases of well-marked lead-poisoning.

Putnam refers to another epidemic, in which thirty-eight persons were exposed to poisoning through drinking-water. Thirteen were affected; but no children were attacked, although there were eight among those who had been drinking the infected water. It is probable, therefore, that children are not so liable to lead-poisoning as adults; and this is no doubt due to the fact of their possessing more active powers of elimination; their greater bodily activity, and the greater energy of all of their secretions, causing the ready elimination of the lead from the system.

The sources of lead-poisoning are so numerous that it is remarkable that more cases do not occur. Drinking-water in cities, from passing through lead pipes, frequently becomes charged with lead. Lead is to be found in cooking utensils, in red rubber, which is sometimes used for making nipples for nursing-bottles, in the solder used in cans, coverings of sweetmeats, and in lead chromate, which is used in coloring toys, cloths, and other articles.

It is evident from the cases that have been recorded, in which a large number of persons have been equally exposed to the danger of lead-poisoning, that the degree of susceptibility varies, as but a small proportion of the persons exposed are attacked.

The symptoms of lead-poisoning in children which have been most frequently noted are disturbances of digestion, such as colic and vomiting; and the cerebral symptoms, indicated by headache, convulsions, and stupor. Chronic lead-poisoning is most likely to be manifested by a general loss of flesh,

[1] Read before the Association of American Physicians at Washington, D. C., May 31, 1894.

[2] Encyclopedia of the Diseases of Children, vol. iv, p. 615.

[3] "Chronic Lead-poisoning," System of Medicine, vol. v, p. 686.

failure of appetite, and the earthen hue of the skin, with a jaundiced condition of the conjunctiva. In chronic lead-poisoning disorders of digestion are most common; constipation, attacks of colic and vomiting frequently occur, and there is other evidence of derangement of the stomach in the defective assimilation that exists. In other cases symptoms of kidney-disease are present; and it is well known that there is a form of nephritis due to accumulation of lead in the kidneys.

The symptoms dependent upon disease of the nervous system due to lead-poisoning are motor and sensory. The most common of these, of course, is paralysis of the extensor muscles of the forearms. In children, however, it is a noteworthy fact that the paralysis is as liable to affect the lower extremities as the upper. There are but few cases reported in which sensory disturbances have been met with in children. Cerebral symptoms are not uncommon in children. The lead encephalopathies in children have been frequently met with, especially, as already remarked, among the cases reported by Stewart, and Putnam refers to other cases.

The cases of lead-palsy in children which are quoted by Putnam are, first, that of a girl of eight years, reported in the *Lancet*, who suffered from paralysis of all four extremities, from the use of Sheffield drinking-water; and a similar case which was related by Seligmüller, who credits it to Duchenne.

H. D. Chapin[1] gives the history of two cases of lead-palsy in children. I will detail these at some length because of their curious similarity to the cases which I shall report later.

The father was a painter, and kept paint in the house, so that the children were constantly exposed to its influence. They enjoyed good health until December 25, 1882, when the room in which the children lived was painted. On January 1, 1883, one week later, F. W., aged seven years, was seized with abdominal cramps; on the next day R. W., aged five, complained of the same symptoms. The pain lasted for four weeks, and there was intense thirst. There was then pain and soreness in the legs, and the children were averse to walking. By the last of January they could not stand. They then improved somewhat, but during February another similar attack occurred. There was pain, followed by paralysis, and the loss of power lasted much longer than in the first attack. On May 3d, a third attack occurred in one boy, in which the hand was affected. The children now came under Dr. Chapin's care. They could walk with difficulty, and a blue line was observed upon the gums. They were lost sight of for a year, when they were examined again by Dr. Chapin. They were then worse than they had been before; they were utterly unable to walk, and pains throughout the body were complained of. The teeth were loose, the gums were spongy, and there was headache. The muscles did not respond to faradism or galvanism, but sensation was normal. The house in which they lived had been cleared of paint a year previous, and there was nothing to account for the repeated attacks.

The children were admitted to the hospital, and after treatment they improved greatly and were able to walk somewhat. An examination of the urine showed the presence of lead. There was partial paralysis of the anterior leg-muscles, and these showed the reaction of degeneration.

Dr. Chapin called attention to the striking resemblance of these cases to spinal paralysis of infancy. This writer also related the case of a child, two and a half years of age, in which a solution of lead acetate was applied to a splinter-wound. In four days both legs were paralyzed, but the child soon got quite well. This is, I think, rather a doubtful case of lead-paralysis.

The sixth case is reported by Putnam, from the records of the Children's Hospital, Boston, in which a girl of six years, after having been exposed to a freshly-painted house, had attacks of vomiting, which affected her at intervals for two weeks, followed by weakness of the legs, toe-drop, and waddling gait. A month later there was weakness of the fingers and the wrist; the extensor muscles were affected in both arms and legs, and the knee-jerks were absent. Two months later the paralysis had disappeared, but the legs were easily fatigued.

A seventh case has been reported by Miller,[1] in which a child of four years was poisoned by drinking-water; but it is merely observed that there was a paralytic state.

A case is reported by Letheby, in which a child of six years took lead acetate in doses of one-fifteenth of a grain two or three times a day for nine weeks. There was loss of flesh, colic, paralysis of the limbs, convulsions and coma, followed by death, which occurred two days after withdrawal of the medicine.

These constitute all the cases of lead-palsy in children that I have been able to find, except one reported by Suckling,[2] in a boy of fourteen years, who worked in zinc and lead for eighteen months, and who presented evidences of multiple neuritis, without other symptoms of lead-poisoning.

The following three cases came under my observation at the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases. The parents were healthy and had nine children. One child died of spinal meningitis at five years of age. It had from birth a large head. Another child died of

[1] Medical Record, New York, 1884, p. 546.

[1] New Orleans Medical and Surgical Journal, 1873, vol. i, p. 198.
[2] British Medical Journal, 1888, vol. i, p. 649.

convulsions at three years of age. Four other children are perfectly healthy, and the remaining three are the cases of which I shall relate the histories.

The father is a house-painter by occupation, and had his shop in the house in which he lived. The children frequently played about the room in which he kept his paints, and often got the paint on their hands and faces, and sometimes were seen to put it in their mouths.

CASE I.—Sarah McD., aged ten years and six months.

Previous history. Her health had always been good previous to the onset of the present trouble. She cut her teeth and walked at an early age, and never had any intestinal disorders.

She was brought for treatment to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, in July, 1889. About one month previously, she awoke in the morning with partial loss of power in the legs. She had fever of short duration, and there was constipation and some vomiting, but no colic. The weakness of the legs steadily increased, and pain in the legs was complained of. Four weeks later the arms became weak, and there was gradual wasting of all the limbs. The weakness and atrophy were most marked on the right side.

The child was treated as an out-patient by means of electricity, and in October, 1889, she had almost completely recovered the use of her legs. In June, 1890, she grew gradually weak for about a week. She then lost the power of standing, and could not use her arms. In this attack there was fever, vomiting, and constipation, but no colic. There were no convulsions, no coma, and no headache. On July 14, 1890, she was admitted to the hospital. Her condition was then as follows:

There was loss of power in all of the muscles of the legs, more or less complete; and there was complete wrist-drop and ankle-drop. The patient was unable to use the hands or arms, except that she could slightly move the arms at the shoulders. There was great muscular wasting, but no changes in sensibility. The patient's mind was clear, and her general health was good.

The electric examination showed absence of response to the faradic current in the extensors of the legs, thighs, and forearms, and diminished reaction in the flexors to galvanism.

The reactions to the galvanic current were as follows:

Right tibialis anticus and common extensors	R D
Right peronei	K cl > A cl.
Left tibialis anticus and common extensors .	K cl = A cl.
Left peronei	K cl > A cl.
Left forearm-extensors	R D
Right forearm-extensors	K cl > A cl.

The patient was treated with daily faradization and massage, and in about four months she was able to walk about and to use the arms freely. She was discharged greatly improved, November 8, 1890.

She was examined on May 17, 1894, and her condition was as follows:

Both feet are flat, and foot-drop is marked on both sides, when sitting. The left great toe is abducted, and all of the toes of the right foot are abducted, the great toe especially. This toe is also rotated to an angle of about 90°, so that its dorsal surface points laterally. The patient is unable to flex the feet. The left leg is a little smaller than the right. There is no wasting in the arms, and the muscular power in both is good. In walking, there is a tendency to walk on the toes, on account of a slight contraction of the tendo Achillis. The patient's general health is good, and the gums are free from discoloration or disease.

The eyes were examined by Dr. A. G. Thomson, who made the following report:

The pupils are equal, and react normally to light; the discs are a trifle red; the outlines of the discs are well marked; there is no lesion of the fundus; the muscular balance is good; the form and color fields are normal. V. = 20/20 with both eyes.

CASE II.—Harry McD., a brother of the preceding patient, was admitted to the hospital July 11, 1892. He was six years of age, was born normally, and was breast-fed. He began to cut teeth at the age of three months. He was healthy until the sixth month, when he had convulsions, which lasted three days. The spasms were general, but there was no subsequent paralysis. When sixteen months old he had entero-colitis. He began to walk at fifteen months of age. This child also had access to the room in which his father's paints were kept, and was frequently besmeared with paint. In November, 1891, he had an attack of fever accompanied by vomiting, loss of appetite, colic, and constipation. This attack lasted for about three weeks, when it was noticed that the legs and arms were weak. The arms could not be raised above the head, and the hands dropped at the wrists. There was loss of power in the legs, so that the child was unable to walk. Complaint of pain in the knees was frequently made. The legs and arms grew steadily thinner, and the muscular weakness increased.

On admission the child was pallid and thin. He possessed normal intelligence; his digestion, appetite, and bowels were in good condition. He was unable to stand, or to walk, and there was but little power in the muscles of the legs. The feet were in a position of ankle-drop, and attempts to flex the feet were futile. The arms could be moved slightly at the shoulders, but the power in the muscles of the arms and forearms was almost absent. There was complete wrist-drop. There was no facial paralysis.

Atrophy. There was marked wasting in the muscles of both arms and legs. There was no response to the faradic current; and there was great quantitative change in the extensors of the thighs, arms and forearms, to galvanism. R. D. was present in the extensors of the left leg, and in the extensors of the right leg. The knee-jerks were absent, and the arm-jerks were decreased.

The patient was treated with massage and electricity, and steady improvement took place; so that in five months he was able to walk about unassisted, but the toes were dragged and the feet

flapped in walking. The patient had gained flesh, and the color was good.

March 27, 1894. The condition of the boy was noted as follows: He walks with the feet far apart and the toes inverted. The left leg is much weaker than the right. The circumference of the right thigh is eight inches, of the left thigh eight and a quarter inches; that of the right calf is six and a quarter inches, of the left seven inches. The knee-jerk is absent on both sides, and there is no reinforcement. There is left foot-drop, and the muscles of the leg of this side are markedly wasted. The left hand is weak, and there is atrophy of the thenar and hypothenar muscles. The elbow-jerks can be elicited.

The electric examination shows good response in the peroneal and calf muscles. The flexors of the thighs respond readily. R. D. is found in the tibialis anticus and extensor communis of both legs. The eyes show nothing abnormal.

CASE III.—Eddie McD., aged three years, a brother of the two previous patients, was admitted to the hospital July 11, 1892. He had always been healthy up to the present trouble. He began to walk at about the age of two years, but only with assistance. It was then noticed for the first time that the right leg was weak and that the foot was dragged in walking. He complained of some pain in the right knee at the same time. The leg continued to grow smaller until his admission to the hospital.

On admission, it was found that both legs were weak and that there was complete wrist-drop. The extensors of the hands seemed to be the only muscles which were affected, as the arms could be moved in all directions. The electric examination showed reaction of degeneration in the muscles of both legs. The knee-jerks were absent on both sides. This patient also improved under the use of massage and electricity, and in five months he began to walk unassisted, but dragged the toes on both sides, more especially on the right side. The knee-jerks had returned and were slightly exaggerated.

March 27, 1894. The patient looks strong and ruddy. He runs about with freedom, but drags the right foot, and when lying down there is right foot-drop. The leg is wasted and there is inability to flex the foot. The thighs are each ten inches in circumference; the right calf is seven inches, and the left seven and a half inches. Sensation is perfect, and there are no trophic changes. The left hand is somewhat weaker than the right. The right knee-jerk is grossly exaggerated, but there is no ankle-clonus. The knee-jerk on the left is slightly exaggerated. The electric examination shows normal reactions in all of the muscles of the left leg and of the right calf. In the extensors of the right foot there is loss to the faradic current and reaction of degeneration.

In neither of these children was any blue line on the gums observed, or any diseased condition of the teeth or gums. The digestive organs were in fairly good condition on admission to the hospital, and although the children were thin and pallid, there was no distinct saturnine cachexia noticeable.

When the two boys were first admitted, an attempt was made to examine the urine for lead, but this was not successful. They were readmitted in March, 1894, and after potassium iodid had been administered for several days, the urine was collected, evaporated, and carefully tested for lead on three different occasions; but no trace of lead could be recovered. The investigation was made in a careful and thorough manner by Dr. J. E. Talley, the resident physician.

The significance of the presence of lead in the urine in small quantities is not great, when we consider the statement of Putnam, in the article already referred to, that Drs. Comey and Worcester had analyzed for him the urine of more than 150 persons living mainly in the neighborhood of Boston, and not presenting symptoms of lead-poisoning, and found traces of lead in about 25 per cent. of them. Dr. J. Dickson Mann[1] gives as the result of a careful study of two cases these conclusions: "That lead is slowly and more or less continuously eliminated by the bowels, and, *to a very much less extent*, by the kidneys; that when once deposited in the tissues it exists as a stable compound, over which drugs have little, if any power." He also asserts that potassium iodid has absolutely no power as an eliminant of lead, although he admits that it may be beneficial in some other way in cases of chronic lead-poisoning.

In the cases that I have related, the symptoms presented were those of poliomyelitis; indeed, when Sarah McD., the eldest child, first presented herself at the Infirmary, I believed the case was one of that disease; and when she returned a year later with a relapse, I regarded it as a remarkable instance of a second attack of infantile spinal paralysis. It was not until the second child was brought to me for treatment that I suspected some common cause for the disease, and thought that it might be one of those instances of epidemic poliomyelitis due to microbic infection.

On inquiring into the history of the children I found that their father was a painter, but the mother strenuously denied that they had been exposed to contact with the paints. When the third case was brought to me I asked my friend, Dr. J. H. Rhein, to visit the home of the children; and he discovered the fact that there was a great deal of white lead lying about, and that the children had frequently played in the paint-room, and were often daubed with paint.

The resemblance of lead-palsy in children to poliomyelitis has been noted by several writers; and it seems possible that some of the cases that have been recorded as instances of poliomyelitis may have been due to chronic lead-poisoning.

[1] British Med. Journ., February 25, 1893.

The pathology of lead-poisoning in children is generally considered as consisting in changes in the peripheral nerves; and these alterations are very closely allied to those met with in the ordinary forms of multiple neuritis. There is good reason to believe, however, that in many cases of typical lead-paralysis the symptoms are due primarily to the direct action of the lead upon the muscles. It is also probable, and this is also suggested by Putnam, that chronic lead-poisoning may produce typical changes in the anterior horns of the spinal cord, and thus give rise to a poliomyelitis, identical in its symptoms with the acute, or, so to speak, idiopathic form of the disease.

SOME PHYSIOLOGIC EFFECTS OF MUSIC IN HYPNOTIZED SUBJECTS.

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HAVING been led during the past year by an interest in musical esthetics to an investigation of the expressive power of music, especially with reference to the Wagnerian music-dramas, I came upon certain results extremely interesting in their nature, and certainly valuable as contributions to our knowledge of musical effect. These were the result of experiments made to ascertain the physiologic and mental effects of music in subjects that had been put into a state of hypnosis.

It has long been known that music is capable of inducing changes in certain functions of the body, as the circulation, respiration, etc. The marked effects that musical sounds have sometimes produced in animals are also familiar. From the legends of Apollo down to physiologic experiments of modern times, records have been made from time to time of such observations, but the field has, apparently, appeared so little promising that scientific experimentation of any importance has not been done in this line. The majority of the observations recorded have been of a popular nature, in like manner noted, and are, chiefly, of little value. Occasionally these are collected, new facts added from the author's experience, and an attempt made to draw some sort of a conclusion or to arrive at some law of musical effect. Among the more important of these are: "Effets et influence de la Musique sur la Santé et sur la Maladie" (Chomet). "Sull' importanza fisiologica e terapeutica della Musica" (Vigna). Also occasional articles appear in the medical journals upon the effects of music in disease, especially in abnormal mental conditions. But prolonged and careful investigation seems never to have been made in this direction, and the results of the recorded observations are practically of little importance.

While attending performances of Wagner operas at Munich and Vienna an observation of musical people who were deeply affected by the Wagnerian music led me to the thought that these musical "Schwärmer" in their state of musical *en rapport* were in a condition of self-induced hypnosis, and further observation tended to confirm this idea. In giving themselves up to the emotional effect of the music, these people were putting forward their subjective natures at the expense of their objective relations to the world; for the time, being in a state exactly analogous to the hypnotic state, if not really the same. From this it was but a quick passage to the thought that the power of music, whatever that might be, would be displayed and felt in its greatest and purest force in conditions of complete mental subjectivity, when all external connections and relations have been removed—a state in which nothing but the music would exist for the mind—that is, a complete hypnotic state.

At the first opportunity for making such experiments, the effect of music upon persons who had been put into the hypnotic state was tried with results of a very interesting and remarkable nature. After a great deal of research I have not been able to find elsewhere anything of the nature of these experiments, or to find anywhere records of such decided effects of music upon the physiologic functions of the body. These effects were so constant and so marked in all of the cases experimented upon that I consider them worthy of report.

The number of cases experimented upon is only seven, the small number being due to the reluctance of the average normal individual to be made the subject of hypnotic experiments; but these seven represented a wide range of individual character within limits apparently normal. Of this number, five were men, two were women. All were healthy and passed for normal individuals, and as possessing more than an average mental ability. No nervous or abnormal condition existed in any subject, and only one could be called emotional. Four were physicians and teachers, the others students. No one of them had either been hypnotized before or had been especially interested in the subject. All but one consented to the experiments with reluctance, and entered into the hypnotic state only because of the scientific aim. No one of the subjects was a musician in any practical way, and with but one exception they did not possess any marked development of the musical sense. In the normal state music produced no great emotional effect and no apparent physiologic action. All but one were more or less fond of musical sounds, and derived pleasure from the art.

As all experimental work in hypnotism is especially liable to error through deception, either voluntary or involuntary, on the part of the subjects,

especial care was taken to avoid this, although the character of the subjects was such as to make this precaution seemingly unnecessary. The experiments were made at different times, and no occasion was given for the imitation of results obtained in one subject by any of the others. Moreover, as the chief effects were physiologic, there was no chance for any such deception.

The subjects were hypnotized by the common method of fixing the eyes, passing the hands over the head and face, and at the same time making word-suggestion. After several trials they could usually be brought into a deep hypnotic state. This was done in a room containing a piano, the subject being placed in a chair or upon a lounge near the instrument. As soon as the hypnotic state was induced the following suggestion was given to the patient: "You are dead to everything else in the world except the music which is now to be played, and you will feel and know nothing but this music. Moreover, when awakened, you will remember what effect it has had upon you." A composition would then be played, and the physiologic effects noted; and then the subject was awakened and asked to give his experience, and it is the result of some of these experiments that I now wish to give.

Mr. M. is a physician, forty years old, fond of music and of rather emotional nature. He is easily hypnotized and passes quickly into the deepest hypnotic state. Wagner's "Ride of the Walküre" was played from the piano-score. The subject's pulse became at once more rapid, fuller, and of increased tension. As the music continued the pulse-rate rose from 60, his normal rate, to 120 per minute, becoming very quick, full, and of low tension; at the same time the rate of respiration was increased from 18 to 30 per minute. The subject's face showed great mental excitement; his whole body was thrown into motion; the legs were drawn up and the arms tossed in the air; at the same time the whole body was bathed in a profuse sweat. On being awakened the subject said that he did not perceive the music as sound but as *feeling*, and that this feeling was a sensation of wild excitement, brought on by "riding furiously through the air." This state of mind brought up before him in the most realistic and vivid manner imaginable the picture of the ride of Tam O'Shanter, which he had seen years before; that almost immediately this became real to him, and in some way he took part in the wild chase, not as a witch, devil, or as Tam, but in some way his consciousness was spread through every part of the scene, being of it, and yet also playing the part of a spectator.

Mr. O. is twenty-two years old, of average musical and emotional development. He is not so easily hypnotized as the first subject and does not pass into such a deep state. Under the influence of the same musical composition, the same effect upon pulse and respiration was produced, the former rising in rate from 70 to 120 beats per minute. The patient's expression remained unchanged, and no movement of the body was made. The skin was covered with profuse perspiration. When aroused the subject said that he had received a perfect sensation of "riding furiously through the air," and that this feeling had created for him a perfect picture of a horse-race in the most complete and startling detail.

The effect of this composition upon all was practically the same. All experienced a "feeling of riding," which almost immediately brought up from their past experience some association directly connected with this state of feeling; as, for instance, the physician had at one time been deeply impressed by a large picture of Tam O'Shanter's ride; the student had previously attended horse-races with great interest. Only one of the subjects knew of the connection of the music with the story of the "Walküre;" and to that one it always expressed and pictured the wild ride of the daughters of Wotan, the subject taking part in the ride.

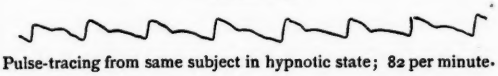
It is here to be noted that the subjects could not tell afterward what music had been played to them while in the hypnotic state; and that the same composition played to them while in the normal state produced no impression comparable with that received in the hypnotic condition, and was without physiologic effect.

Appended are some pulse-tracings, taken from one of the subjects during the playing of the "Ride of the Walküre." Though made with a very poor instrument, they were taken under exactly similar conditions, and in the same period of time, and thus show the relative changes in the pulse-wave under the effects of music.

TRACING 1.

Pulse-tracing in normal condition; 70 beats per minute.

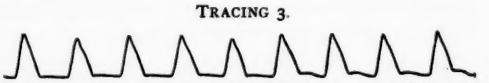
TRACING 2.



Pulse-tracing from same subject in hypnotic state; 82 per minute.

In all of the subjects, after being hypnotized, there was a slight increase in the rate, with a decrease in size and tension.

TRACING 3.



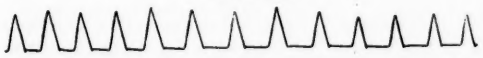
Pulse-tracing from same subject, in hypnotic condition, just after the playing of the selection from Wagner's "Die Walküre" had been begun; rate 95 per minute, high and quick, tension lowered.

As the weight upon the lever was kept in the same place for all of these tracings, the true character of the wave in Nos. 3 and 4 is not shown, as the

weight was not properly adjusted to the higher wave.

The fire-music from the closing scene of the "Walküre" also produced increased pulse-rate, with greater fulness and less tension. To one subject it brought up an image of flashing fire; to

TRACING 4.



From same subject, in hypnotic condition, during height of excitement, produced by same composition; 120 beats per minute, high, quick; tension low, marked irregularity in force. Tracing taken from the same person in normal condition, after violent exercise, shows almost exactly the same character.

another of waters rippling and sparkling in the sunshine; to another, of an ocean in which great breakers threw up glittering spray into the sunshine, the chief idea being in every case that of "sparkling."

The "Walhalla" motive, played in full, at first slowed the pulse and raised the tension; later, almost doubling the rate and lowering the tension. To the subject it gave a feeling of "lofty grandeur and calmness," and this in turn brought back the experience of mountain-climbing made years before, together with the mental state produced by the contemplation of a landscape of "lofty grandeur."

The music of the scene in which Brünhilde appears to summon Sigmund to Walhalla produced a very marked change in the pulse, which was made slow, irregular in rhythm, and very small. The respirations were decreased in rate, and became gasping; the face became pale, and covered with cold perspiration. The feeling described by the subjects was that of "death." No definite impression could or would be described.

The effect of single chords in certain relations produced wonderful effects. If during the height of excitement caused by the "Ride of the Walküre," in the key of B major, the chord of B minor was suddenly and loudly played, a most remarkable change was produced in the subject. In the case of the physician all excitement suddenly ceased, the subject's face became ashy pale, and covered with cold sweat; the pulse-rate dropped from 120 to 40 per minute, and became very irregular, soft, and small; the respirations were decreased in number, and became sighing in character. The whole picture presented was one of complete collapse, so that all who saw it were alarmed. On being awakened the subject said that he had been oppressed by a horrible fear, because "everything had suddenly seemed to come to an end."

This experiment was repeated many times, with always the same result. Upon the other subjects a similar effect was produced, with the same sensations, but of less intensity. It is to be remembered that none of the others could be put into so complete a state of hypnosis as this one subject. The same chord played in any other relation than the one mentioned produced no effect whatever.

Many experiments similar to these were tried, and from the results obtained it must be conceded that music is capable of producing remarkable physiologic effects in persons in the hypnotic state. These changes are most marked in the circulatory system. The action of the heart may, on the one hand, be doubled, or on the other decreased two-thirds of its rate almost instantly, a change that cannot be produced by drugs or by any form of suggestion. At the same time the other characters of the pulse are correspondingly affected. The rate and character of respiration can also be greatly changed, and the vasomotor system is also apparently under musical influence.

Other curious effects were also met with in the course of the experimentation. Certain chords produced in one subject, whenever they were sounded in certain combinations, most marked and painful contractions in the muscles of the legs, of so intense a degree as to cause pain for hours afterward. It was found, moreover, that the power of music was stronger than that of word-suggestion. One patient was thrown into a state of hyperesthesia by the playing of the overture to "Tannhaüser." When given a suggestion that a needle run into his arm would cause no pain he shrieked loudly because of intense pain produced by simple contact of the blunt end of the needle with the surface of the body. At all other times the spoken suggestion produced complete anesthesia. Connected with the hyperesthesia was also an exaggeration of the tendon-reflexes.

It was also found that as a means of producing the hypnotic state music is far superior to the ordinary methods. Different compositions seem to vary in power; as, for instance, one subject could be hypnotized only by the "Pilgrims' Chorus" from "Tannhaüser." Usually before the fifth measure was reached he would be in a complete hypnotic condition; and by no other means could this be accomplished so quickly and so perfectly. It mattered not where the subject was, or what he was doing at the time, even if in another part of the house; this piece of music, as soon as he had perceived it, had an irresistible power over him. It became necessary finally to oppose this effect by means of word-suggestion, in order to release him from its influence.

Having been told by a physician who was present at some of the experiments described, of a case in his knowledge in which certain combinations of tones in orchestral performances produced sexual

orgasms, an attempt was made to ascertain what effect could be produced upon the sexual function by music popularly supposed to be suggestive. The passages from "Die Walküre," "Tristan and Isolde," etc., long severely criticised because of supposed character in this respect, were found to produce only feelings of "longing," "frenzy," etc., but never exciting any sexual desire or suggestion. By the aid of word-suggestion, such effect could be produced, and the emotions of "longing," etc., could be made identical with the physical desire; but never did music of its own accord arouse such a state. And in this connection it may be said that music never directly aroused any purely physical state, as hunger, thirst, fatigue, etc., but gave birth primarily to soul-states.

The first effect of the music was always the production of a pure emotional state; and this emotion brought up in the subject's mind, through the power of association, a perfect and realistic reproduction of some past experience most closely connected above all other experiences with this emotional state. This was always purely personal. If the music produced the feeling of "death," as did some of the Wagner passages, the experience brought up was always that one death which had most deeply touched the subject's emotional life. The physiologic changes in circulation, etc., were partly the direct outcome of this emotion, and partly the result of the secondary experience. The difference in the effects of these two factors could almost always be noted. Thus, for example, the "Walhalla" motive: when first played it produced increased fulnesss and tension of the pulse, the subject breathing deeply but quietly. As the association of the mountain-climbing rose above the mental horizon the pulse became quicker, with lower tension, and the respirations became increased in rate and force. All of the experiments produced results that could be explained in this way, with the exception of the production in one individual of muscular cramps and hyperesthesia. These conditions seemed to have no relation to the emotional state or to the secondary state of association. As the subject put it: "The music simply did it, and that was all there was to it."

The account of the total number of experiments made in this line might prove interesting reading, as the results certainly in themselves were interesting; but in each case the effect was practically corroborative of the foregoing. It is certainly neither desirable nor safe to draw important conclusions from results obtained in such a small number of cases, and I make this report only in order to call attention to the results obtained in one set of subjects. As the difficulties attending hypnotic experimentation are many, the work necessary to establish these results more firmly can be done only by those who have unusual opportunities for investigation in this line. To such I leave this field. Moreover, if music has any therapeutic value, it must to a chief extent be the effect of suggestion; so that, if anything is to be hoped for from its power it must be along this line. Further investigation must show this.

In conclusion, I would say that experiments of this nature may be attended by danger. The symptoms of collapse developed at times, with the accompanying intense emotional shock, might be increased beyond the point of safety. In individuals of strongly musical and emotional natures disastrous results are not inconceivable. There is also danger of establishing an hypnotic habit. In one subject, to whom the intense emotions and vivid experiences were very pleasant, the power of self-hypnosis under the influence of music was practised even in public concerts. The habit was broken by means of word-suggestion. It is necessary, therefore, that hypnotic experiments be conducted with great care, and the possibilities always borne in mind.

CHRONIC INFLAMMATION OF THE SEMINAL VESICLES.[1]

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I FEAR the title of this paper may suggest the idea of rare and obscure disease in an inaccessible situation, of interest only to specialists; but I hope to be able to show that we have within reach a means of interpreting many puzzling symptoms in a large and important class of cases.

The apparent indifference on the part of the profession at large, and even of specialists, toward the vesiculæ seminales is surprising, and it is only within a few years that they have begun to attract in some degree the attention they deserve. Mr. Jordan Lloyd, of Birmingham, England, in 1889, was the first to give them full recognition, and to demonstrate their importance when diseased. In Gouley's *Diseases of the Urinary Apparatus* a chapter is mainly devoted to the subject, which is particularly valuable for its exposition of the anatomy, physiology, and pathology. About a year ago Dr. Eugene Fuller, of New York, read an article that gives a more complete and detailed description than any other that has yet appeared of vesicular inflammation, and especially of its treatment, which he has developed and put on a practical basis.

It may be well to recall a few anatomical points:

"The vesiculæ seminales are two irregularly convoluted tubes, lying one on each side of the under

[1] Read at the Annual Meeting of the Massachusetts Medical Society, Boston, June 13, 1894.

surface of the male bladder. . . . They vary greatly in size, . . . but average perhaps two inches in length, as they lie on the bladder. If dissected off and straightened out, they are found to be two or three times this length. . . . The vasa deferentia pass . . . along the inner sides of the two vesiculæ and unite at an acute angle with the ducts of the seminal vesicles to form the common (ejaculatory) ducts. Just before this union takes place each vas deferens widens out into a tortuous sac or ampulla, which closely resembles in structure the seminal vesicle itself." (Thorndike.)

Inflammation of the seminal vesicles, variously called spermato-cystitis, gonecystitis (Gouley), and seminal vesiculitis, is analogous to salpingitis—that is to say, the vesicles, according to Lloyd, are the analogues of the Fallopian tubes. It is rarely, if ever, a primary affection. It is almost always secondary to urethritis, generally gonorrheal, or it may be, though rarely, secondary to tuberculosis or malignant growth in the vesicle. It is commonly, but not necessarily, present in cases in which there is or has been epididymitis.

Acute inflammation is almost always of gonorrheal origin; it is similar to epididymitis in a general way, and rarely advances to suppuration. The symptoms are substantially those of acute prostatitis: local pain and heat, spasmodic contractions of the perineal muscles, etc.; and this has probably led to mistaken diagnosis in many cases.

But it is the more common and more important chronic inflammation that we have now chiefly to consider. This may result from the acute form first mentioned, but is usually chronic, or at most subacute, from the beginning. In this case the source of the trouble may be gonorrheal prostatitis or cystitis, or a posterior urethral catarrh resulting from congestion of the prostatic portion brought about by prolonged and repeated sexual excitement.

In chronic vesiculitis we have a train of symptoms commonly enough observed and not always peculiar to this affection, and, therefore, generally attributed to other causes. There may be a chronic urethral discharge, with shreds in the urine; or vesical irritability with frequent micturition, not always present and often slight, but sometimes more marked, with urine more or less turbid and containing shreds and clumps of pus and blood. In a large majority of cases there is some disturbance of the sexual function, showing itself by the presence of one or more of the following symptoms: deficient erectile power, with or without diminished desire, spermatorrhea, frequent emissions, occasionally hemospermatism, viscid discharge from the meatus at stool, and the various local subjective sensations, as well as the general nervous and mental symptoms peculiar to sexual neurasthenia. A burning feeling in the perineum and along the urethra is one of the more common of the subjective sensations. Spermatic colic, a pain in the region of the vesicle, due to occlusion of the duct, and sometimes accompanying ejaculation during coitus or an emission, is an occasional symptom.

It might seem that with symptoms so varied and not wholly characteristic the diagnosis would not be easy, and in fact, it can only be made by rectal examination. When a sufficient number of examinations have been made to thoroughly familiarize one with the topography of the region under varying conditions, the diagnosis is not difficult in a well-marked case. The vesicles, or at least their lower parts, are usually within easy reach of the forefinger, though in some cases they are more difficult to get at. The patient with a moderately full bladder should stand with the body bent to a right angle at the hips, with the knees straight, the feet spread apart and the hands resting on a chair. The forefinger is passed slowly and gently through the anus and over the prostate, which should be examined and its condition noted as to size, form, and consistence. According to my experience, it is rather small in a large proportion of these cases. Just beyond the lateral lobes of the prostate, lying in the sulcus between it and the distended bladder, and extending obliquely outward and backward toward either side, are the seminal vesicles. The examination is aided by exerting counter-pressure with the free hand over the inguinal region of the side that is being explored. It is further aided in cases in which the vesicles are difficult of access by placing the foot corresponding to the examining hand on a chair and bracing the elbow against the knee; in this way considerable force can be exerted by which to overcome the resistance of the perineal muscles.

When normal the vesicles are soft and scarcely appreciable to the touch, sometimes not at all; but when diseased they are plainly felt. One or both may be affected. Sometimes they are nodular and indurated, resembling somewhat a twisted and knotted cord. Again, they are much distended, and form smooth, rounded bodies that on palpation are felt to contain fluid. In the latter case the vesicle is often so closely attached to the prostate as to be easily mistaken for it—that is, it seems to form the posterior border of the lobe on that side, but with care fluctuation can be detected and a line of demarcation between the vesicle and the prostate can be made out, similar to the line of demarcation between the testicle and the epididymis in acute inflammation of the latter organ. Sometimes the vesicles are much enlarged and dilated, but not distended, and form soft, fluctuating sacs. Gouley speaks of shriveling of the vesicles, generally asso-

ciated with prostatic enlargement; but a diagnosis of this condition could hardly be made during life.

In acute inflammation, of course, the swelling is greater, the perivesicular tissue being involved; it is diffused, doughy, and hot, and is extremely sensitive to the touch. The sensation in the chronic affection varies in different cases. Sometimes there is decided pain and tenderness on pressure, but these are usually not marked, unless the finger bears down quite hard; more commonly a disagreeable sensation is described, which occasionally causes faintness. Sometimes there is only slight sensitiveness, even on firm pressure. By means of this pressure the contents of the vesicle are emptied into the deep urethra, and, if in considerable quantity, will ooze from the meatus and will in any case appear in the urine passed after the operation. The fluid thus squeezed out varies in different cases from a thin liquid, resembling skimmed milk, to a thick, gelatinous substance, sometimes containing inspissated particles and appearing in the urine in the form of clumps and shreds. Microscopic examination of the thin fluid shows only a little epithelium and a few dead spermatozoa; the thick substance often seems to consist of masses and bands of fibrinous material, entangled in which are sometimes a few, sometimes great numbers of motionless spermatozoa. When normal vesicles are squeezed nothing will appear, except perhaps a very slight turbidity of the urine.

With respect to prognosis, this must necessarily, a few years ago, have been regarded as decidedly unfavorable; but owing to recent progress in treatment, it is already safe to say that improvement may be expected in a majority of cases, although more extensive data than are now attainable will be required before a reliable opinion can be formed as to the chances of complete recovery.

The treatment is simple, but requires a good deal of judgment, chiefly to avoid overdoing. It consists in pressure with the end of the forefinger, reaching as far up toward the free end of the vesicle as possible, and then stripping it down toward the duct. In this way the abnormal secretions are removed and are not allowed to accumulate. Sometimes the ducts are obstructed by inspissated material or by concretions called sympexia, and several treatments are necessary to clear them; or a sound may be passed into the bladder and the vesicles pressed against it, as advised by Gouley, the obstruction being in this way more easily dislodged. The danger in overdoing the treatment is of bringing on an acute exacerbation by too active manipulation, which I was unfortunate enough to do in one of my first cases. As some patients are much more susceptible to reaction than others, great caution should be observed at first, only gentle pressure being used, and the effect carefully watched. As to frequency of the sittings, Gouley recommends daily treatment, but Fuller thinks it should not be repeated oftener than once in four days. The effect of the treatment is not, as a rule, immediately apparent, although in some cases marked improvement is soon noticeable.

It is generally necessary to keep up the treatment for several weeks, sometimes even months, before the vesicles are restored to a normal condition. This is brought about by keeping them empty until their muscular walls recover their tone and they are able to properly carry on their functions. This process is appreciable to the physician in a gradual decrease of the swelling and softening of the induration, until after a while the vesicles apparently disappear—that is, they become as difficult to feel as in the normal state. At the same time the sensitiveness steadily diminishes and the amount of fluid expressed grows constantly less until there is none. I have noticed, also, in a few cases that the prostate, which is necessarily massaged more or less during the manipulation of the vesicles, has undergone considerable change, increasing in size when atrophied, and assuming a more nearly normal consistency. In the course of the treatment a gradual improvement in the general health and in the nervous condition, or a diminution in the frequency of emissions, or, in general, an abatement of whatever symptoms secondary to the disorder have been prominent in each particular case may be looked for. No medicinal treatment is required, unless indicated by special symptoms.

Since the latter part of January, when, through Dr. Fuller, whose methods I have closely followed, I became especially interested in this subject, I have examined seventy-four cases with reference to the condition of the seminal vesicles. In all of these there was reason to suspect that disease of the vesicles might exist. In fifty-five a more or less abnormal condition was found, both vesicles being affected in thirty-eight of them. In two cases the trouble was acute, in three, subacute, and in the remainder it was chronic. In the acute cases, in two of the subacute and in thirty-one of the chronic cases there was a history of gonorrhea. Of twenty-three cases, all chronic, in which I have been able to follow up the treatment sufficiently long to get definite indications of its effect, there has been improvement in nearly all. In a few it has been marked and speedy, some having practically recovered; in the majority it is still too soon to give final results, while a very few have been disappointing.

Since this paper was written I have had the pleasure and advantage of hearing a very exhaustive article on the subject by Dr. R. W. Taylor, of New York, who, at the same time showed by means of an

anatomical specimen that the vesicle is convoluted and doubled on itself in such a way that stripping the organ with the finger toward the duct would empty only a portion of it, together perhaps with the vas deferens. He believes that the dilated portion or ampulla of the vas deferens is often mistaken for the vesicle. He is, in fact, somewhat skeptical as to the efficacy of the treatment by pressure. However this may be, it is certain that the large amount of fluid squeezed out and the progressive diminution in the swelling observed in many cases show that the pressure has been effectual. In view of these facts, which seem to be not wholly consistent, a few considerations suggest themselves.

1. The fluid in a distended vesicle, subjected to pressure, would escape at the point of least resistance, which would be the natural outlet, no matter how tortuous, unless the wall of the vesicle were ruptured by violence. Simple pressure on such a blind sac would seem better than an attempt to strip the vesicle down toward the duct.

2. The slow and unsatisfactory progress of a few cases may be due to the difficulty of emptying such portions of the vesicle which may in these cases be the chief seat of disease.

3. In some cases the ampulla of the vas deferens may alone be affected, when the stripping process would be easy and effective.

4. Disease of the vas deferens may possibly be of more importance than that of the vesicle itself, obstructing as it does the direct road from the testicle.

5. Simple massage of the vesicles may play an important part in the treatment.

AUTHORITIES.

Jordan Lloyd, M.B., F.R.C.S.: "On Inflammatory Disease of the Seminal Vesicles," British Medical Journal, April 20, 1889; "On Spermato-cystitis," The Lancet, October 31, 1891.

J. W. S. Gouley, M.D.: "Diseases of the Urinary Apparatus," chapter xi, 1892.

F. B. Robinson, B.S., M.D.: "Gonorrhea of the Vesiculæ Seminales," THE MEDICAL NEWS, Philadelphia, May 7, 1892.

Paul Thorndike, M.D.: "Diseases of the Seminal Vesicles" in Morrow's System of Genito-urinary Diseases, Syphilology, and Dermatology, vol. i, 1893. Appended to Dr. Thorndike's article is an extensive bibliography.

Eugene Fuller, M.D.: "Seminal Vesiculitis," Journal of Cutaneous and Genito-urinary Diseases, September, 1893; "Persistent Urethral Discharges dependent on Subacute or Chronic Seminal Vesiculitis," Journal of Cutaneous and Genito-urinary Diseases, June, 1894.

R. W. Taylor, A.M., M.D.: Paper read at the Annual Meeting of the American Association of Genito-urinary Surgeons, Washington, D. C., May 31, 1894. Not yet published.

Teratologia is the name of a new journal whose contents are made up of quarterly contributions to antenatal pathology, with reviews of the current literature of the subject. It is edited by Dr. J. W. Ballantyne, of Edinburgh. The second number bears the date of July, 1894.

CLINICAL MEMORANDUM.

POTASSIUM NITRATE IN THE TREATMENT OF PHLEGMASIA ALBA DOLENS.

BY GREGORY H. HOVNANIAN, M.D.,
OF WEST PULLMAN, ILL.

WITHIN the past month it has fallen to my lot to treat three well-marked cases of phlegmasia alba dolens with potassium nitrate with such gratifying results as to seem to justify publication.

Mrs. H., twenty-three years old, was delivered of her first child by her family physician with instruments, and sustained extensive lacerations of the cervix uteri and perineum, which at the time were not repaired, but were left for a secondary operation. Twelve days after delivery she complained of pain and heaviness in the left leg, and within three days there developed well-marked phlegmasia. On the fourth day of this complication I saw the patient in great agony, with a temperature of 105.2,° a pulse of 130, and respirations 25. The limb was so turgid and swollen that there seemed to be great danger of gangrene or rupture. The woman was at once given morphin sulphate, gr. $\frac{1}{4}$, hypodermatically, and her limb was wrapped with cotton and placed on a feather pillow at a very obtuse angle. I then prescribed a solution of potassium nitrate in water representing five-grain doses, to be given every hour until my return. Seven hours later I found my patient in better condition, with a temperature of 103°, a pulse of 112, and respirations 22, and with less pain and discomfort. The swelling seemed to be less tense and the veins less engorged. The nitrate was continued as before until morning, when I found her in yet better condition. She had slept well during the night, although she had been wakened regularly for her medicine. Her temperature was 100°, her pulse 95, her respirations 20. The swelling was reduced to less than half, and the returning circulation was fairly well established. There was no pain whatever, and but slight tenderness on pressure. The medicine was continued every two hours during the day, until I saw her late in the evening with a temperature of 99°, a pulse of 90, and respirations 18. The swelling had almost entirely gone, and everything was in good condition. The nitrate was continued for two days in smaller doses, and at longer intervals, and then discontinued.

The second case is more interesting because of a relapse, in the course of which potassium nitrate was given a more thorough test.

Mrs. S., thirty-five years old, after a normal labor, lasting eight hours, was delivered of her fourth child. She sustained no laceration of the cervix uteri, but a very slight one of the perineum, necessitating no stitches. According to the statement of the attending physician everything progressed normally until the ninth day after delivery, when symptoms of phlegmasia appeared, and in a few days developed into a typical case. Opiates and laxatives were administered, and evaporating lotions applied to the affected limb without avail until the fourth day, when I saw the patient in consultation. At this time the temperature was 105°, the pulse 120, the respirations 22. The limb was greatly swollen and turgid, and there was besides abdominal tenderness and tym-

pany. Previous to my visit the attending physician, thinking gangrene of the limb imminent, suggested the necessity of longitudinal incisions deep into the limb, but the family would not consent, and requested a consultation. After a thorough examination of the patient's general condition, which was rather unfavorable on account of a weak heart and extreme nervousness, I advised the postponement of surgical interference, and suggested a thorough trial of potassium nitrate. The attending physician assented, and asked me to take charge of the case, as he was obliged to go out of town for a few days. I ordered potassium nitrate, gr. v, every half-hour; meantime I discontinued the evaporating lotion, and wrapped the limb in cotton, and put it at a very obtuse angle on a feather pillow. Eight hours later I found the patient much improved. The temperature was 101.4°, the pulse 100, the respirations 20; the swelling had decreased, and there was less pain. The woman had slept about three hours for the first time in three days, and felt refreshed and hopeful. The abdominal tenderness and tympany had not improved at all (these were undoubtedly due to constipation), yet I did not dare open the bowels from fear of disturbing the limb. I, however, reduced the nitrate to five grains every hour. The following morning I found the woman still more improved, the temperature being 99.2°, the pulse 90, and the respirations 19. The swelling was mostly gone; there was no pain; and all was progressing well, except the abdominal symptoms, which were rather increased and caused much complaint. The nitrate was reduced to five grains every two hours, and small doses of calomel were ordered every half-hour until the bowels moved. During the afternoon the bowels moved twice, with much relief to the abdominal distress. In the evening I found the woman in a very comfortable condition, the swelling fast disappearing, and she out of danger. The next day the nitrate was given every three hours, and the swelling had almost entirely disappeared; but in the evening, in placing her upon the chamber, they wrenched her affected limb, and during the night she suffered excruciating pain. Early in the morning I was sent for, but being away from home I did not see the patient until two o'clock in the afternoon. I was surprised to find her in as bad a condition as on the first day I saw her. The temperature, pulse, and respirations were as high as before, and she seemed to have much more pain, so that I suspected a fracture or dislocation complicating the relapse; but the swelling was so tense that no examination could be made. I ordered opium-suppositories to control the bowels, and put her on five-grain doses of potassium nitrate every hour as before. In the morning I was gratified to find the temperature almost normal, the pain and swelling almost gone, and the patient in a fair way to recovery. After this the nitrate was reduced gradually as before, and she made a rapid recovery.

The third case was a comparatively mild one, and made its appearance earlier than the foregoing two cases, although it did not respond to the treatment so readily.

Mrs. J., thirty years old, after a normal labor, was delivered of her third child without any laceration of the parts. On the third day she had an abundant flow of milk to the breasts, which caused her considerable distress. This was soon checked by massage and laxatives, but on the sixth day the right lower extremity began to swell, and there developed a phlegmasia. The limb was wrapped in cotton, and put at an obtuse angle on a feather pillow, and the woman was given potassium nitrate, gr. v, every hour. Within twenty-four hours the active process was checked, but the pain and swelling were not reduced; nor was the temperature, which was 102°. I increased the dose of the nitrate to five grains every half-hour. This was continued for eighteen hours, after which the swelling and pain began to subside, and entirely disappeared in four days.

It is surprising to note how rapidly the temperature, pain and swelling were reduced by the repeated doses of potassium nitrate, even when antithermics, opiates, and evaporating lotions had proved entirely useless. I did not notice any change in the action of the heart in any of these cases, although the urine was very much increased in quantity. After the temperature was reduced, it had a tendency to remain subnormal for a few days, being 97.8° on an average, and in one case remaining 97.4° for three days, but no chilly sensation was complained of.

I consider friction of the affected limb, as recommended and practised by some, very dangerous, as a blood-clot may be detached and carried to the heart or some other organ, and disastrous results follow. I therefore consider absolute rest and a position of the limb which will slightly relax the vessels essential for safe recovery.

HOSPITAL NOTE.

INHALATIONS OF OXYGEN IN TWO CASES OF OPIUM-POISONING.

[Service of Dr. S. S. STRYKER, Presbyterian Hospital, Philadelphia.]

BY P. M. ASHBURN, M.D.,
RESIDENT PHYSICIAN.

SEEING in THE MEDICAL NEWS of July 21st an extract from the *Lancet* of June 2, 1894, on the use of inhalations of oxygen in the treatment of opium-narcosis, I thought it might prove interesting to relate two cases of opium-poisoning in which oxygen-inhalations were employed.

On June 11th there was admitted to the receiving ward, at about 1 A. M., a child of fourteen months, in deep coma. The mother stated that she had been taking laudanum for the relief of pain, and had left the bottle standing on a window-sill, where the child had gotten it and drunk the contents. The mother could not even approximate the amount taken. The child had drunk the liquid at about 8 P. M., and was treated at home, but grew steadily worse and was sent to the hospital. On admission she was deeply comatose, and completely relaxed, with all reflexes absent, the pupils minutely contracted, the respiration rapid but very shallow and feeble, the pulse rapid, small, and weak. She was given a hypodermatic injection of atropin sulphate, gr. $\frac{1}{100}$, strychnin sulphate, gr. $\frac{1}{100}$, and caffein citrate, gr. $\frac{1}{4}$, which was repeated in fifteen minutes, with no apparent effect, and as the child was sinking and its respirations ceased entirely, resort was had to oxygen-inhalations and artificial respiration. The effect was immediate, and

after six or eight respirations the breathing was spontaneous, full and deep, and the pulse much stronger and fuller. Two gallons of the gas were given at this time, and two gallons every half-hour for the rest of the night. The recovery was uninterrupted and complete.

The second case was that of a man of fifty years, who was admitted June 30th, in deep coma, with minutely contracted pupils, face and hands pale, cool and moist, arms and legs completely relaxed, respirations very slow and shallow, and pulse very soft and compressible. There was no odor on the breath; the urine contained albumin. The temperature was 96.4°, the pulse 124, the respirations 4. The history was that the man had not been feeling well and had retired to his room at 2 P.M., and was not seen again until found in coma almost five hours later. In his room was found a note of farewell and two empty bottles that had contained laudanum. The one was a three-ounce bottle; the other was not brought to the hospital, and its size is not known. On admission the patient was given hypodermatically atropin sulphate, gr. $\frac{1}{80}$; strychnin sulphate, gr. $\frac{1}{10}$; and caffein citrate, gr. jss. There was considerable delay in getting oxygen, and before it arrived the respirations had ceased and the pulse was very bad. Artificial respiration was meanwhile employed, and when the oxygen arrived its administration was at once begun. After a very few breaths of the oxygen the respiration was spontaneous, and the change in the pulse was most marked and gratifying. Almost immediately the pulse became slower and strong and full. The respirations rose to 18 per minute, and were full and deep. Fifteen gallons of oxygen had been used, a considerable part probably being wasted.

At the end of three-quarters of an hour the respirations were again becoming slow and shallow and the pulse weak, so that every half-hour the man was ordered at least two gallons of oxygen, and as much more as might be necessary to get his pulse and respiration in good condition. Sometimes two gallons sufficed, and at other times ten gallons were necessary.

The next day the patient's condition was much improved, but his temperature was high, at one time reaching 104°. The patient had also been getting a grain and a half of caffein citrate every hour for a time, and then every two hours. As the elevation of temperature was ascribed in part to this drug, and as it did not seem to do much good, it was withheld. The patient was thus getting nothing but the oxygen. The urine was found to be dark, of a specific gravity of 1022, and to contain albumin and hyaline and granular tube-casts.

The man came entirely out of his coma, but his breath became urinous and he developed symptoms of uremia, with almost entire suppression of urine. His bowels were moved freely, however, and he seemed to be improving, but died suddenly on the third day after his admission, his temperature a short time before death being 103°.

The autopsy disclosed the existence of chronic parenchymatous nephritis. There was edema of the brain, and almost complete consolidation of both lungs, apparently due to hypostatic congestion, though repeated and careful examination of the lungs before death had shown no abnormal signs other than slightly enfeebled breath-sounds and a few moist râles at the apices.

While it may not appear from the report of these two cases that the oxygen played a very important part, or that it was markedly beneficial, such was certainly the case. The improvement in the pulse and respiration under its use was so rapid and so manifest that all who saw it could not but be convinced. The death of the second case was probably due to the kidney-lesions, with the secondary conditions present in the lungs and brain, and the first marked improvement would in all probability have continued had the kidneys been normal.

THERAPEUTIC NOTES.

BY SOLOMON SOLIS-COHEN, M.D.,
OF PHILADELPHIA;
PROFESSOR OF CLINICAL MEDICINE AND THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; ONE OF THE PHYSICIANS TO THE PHILADELPHIA HOSPITAL, ETC.

VII.

BENZONAPHTOL AND BISMUTH SALICYLATE IN SUMMER DIARRHEA.

THE term summer diarrhea is here used to include the various forms of gastro-intestinal disturbance occurring during warm weather, and especially characterized by frequent, loose, or even fluid discharges from the bowel; sometimes attended with pain; sometimes attended with fever; sometimes associated with nausea and vomiting.

While the pathology and etiology of these various forms of disturbance of the alimentary canal vary in particulars, the general factors are the same; an indiscretion in diet, special or general, remembered or forgotten; over-heating or over-exertion in the heat; irritation or inflammation of the gastro-intestinal mucous membrane in whole or in part; bacterial activity; intoxication by absorption of noxæ from the intestines. After the alimentary canal has been cleansed of irritating materials by the most available means, which may be, according to circumstances, lavage of the stomach, irrigation of the bowel, or the administration of a purge, usually calomel, or a mixture of castor-oil and spiced syrup of rhubarb (equal parts); and after the diet has been duly regulated, I have observed very satisfactory results from the administration of the following combination:

Benzonaphtol Bismuth salicylate Dover's powder	of each, 5 grains.

In capsule, cachet, or powder.

To an adult, one capsule is given every three hours, or as necessary. It is rarely needful to exceed four doses in the twenty-four hours. To children, the same preparation may be given in reduced dosage; thus to a child of two years I have given:

Benzonaphtol	2 grains.
Bismuth salicylate	2 "
Dover's powder	½ grain.

In the mildest cases benzonaphtol alone has proved efficient, and in many cases the opium is unnecessary; but, as a rule, the combination of the three ingredients in the proportions stated is more promptly efficacious, if present experience can be relied upon, than any other routine treatment I have used. This is the second season during which I have employed it.

A word may be added as to diet. It is best, under the conditions stated, to make a complete change in the food, whether of child or of adult. If a child is taking milk in any form—sterilized, boiled, predigested, or plain—all milk should for the time being be cut off. It will not harm a child to go without food for a day or two, but as parents cannot readily be brought to see this, it is best to give some substitute. Barley-water and (home-made) beef-juice are the most available. They may be given alternately in small quantities—from two to four ounces of barley-water; from one to four drams of beef-juice, freshly prepared, every third or fourth hour. If a child has been sick for some time and is much run down, alcohol (from ten to twenty drops of brandy or whiskey) may be added, or given with water between food-times. Smaller quantities of beef-juice, given more frequently, may sometimes be called for by the special conditions of a particular case. If a child is taking various kinds of food, but not much milk, boiled milk with pancreatic powder may be given, as with adults. As a rule, however, it is advisable to avoid milk until the alimentary canal is rendered aseptic, for milk is quite liable to undergo deleterious change after being swallowed, as well as before—a point that is frequently overlooked.

In the case of adults it is usually safe to give boiled milk; in some instances adding sufficient pancreatin and sodium bicarbonate to accomplish artificial digestion in the stomach. I usually prescribe two and a half grains of pancreatin and seven and a half grains of sodium bicarbonate (*i. e.*, one dram and three drams respectively, divided into twenty-four powders, in waxed papers), to be dissolved in an ounce of cold water, and the solution added to a teacupful of warm (previously boiled) milk. This is taken every third hour. When the patient refuses milk, or it is for other reason objectionable, beef-juice, barley-water, tea, coffee, sherry and water, whiskey and water, claret and water, and the like may be given, in small quantities. In most cases the whole question of alimentation is a negative rather than a positive one—to avoid food that will ferment or decompose, or otherwise give rise to irritating products or toxins; for recovery is usually so prompt that the problem of maintaining nutrition does not arise. It is usually best to give water freely—aërated water being preferable.

NEW INSTRUMENTS.

TREATMENT OF URETHRAL VEGETATIONS BY MEANS OF A CIRCULAR CUTTING CURET.

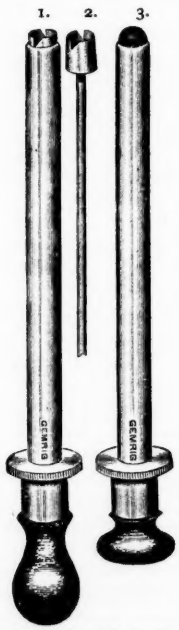
BY JOHN B. DEAVER, M.D.,
OF PHILADELPHIA.

A DEFINITE knowledge of the presence of urethral growths can only be obtained by inspection of the canal. This is now most readily accomplished by the electric-light urethroscope, a valuable instrument, not only in the diagnosis of chronic urethral lesions, but in the treatment of many as well. That the urethroscope is a necessary instrument in the practice of genito-urinary surgery can no longer be questioned.

The removal of certain forms of small urethral growths can be accomplished by local applications made through a urethroscopic tube, while in the case of larger growths, and especially if they be sessile in character, more radical treatment will be required. For the latter purpose I have devised the instrument shown in the accompanying illustrations—a circular cutting curet, which is introduced through a urethroscopic tube.

The instrument consists of a circular blade, with two notches on the free border, opposite each other, and which engage the urethral vegetations. The blade is fastened to the end of a rod mounted in a handle that fits snugly into the proximal end of the urethroscopic tube, thus steadying the curet during manipulation. It is important to introduce as large-sized a tube as the urethra will permit, the object being to put it on the stretch, thus facilitating the removal of the growths.

As the normal urethra varies in caliber, it is necessary to have a number of instruments of different sizes. The hemorrhage following the removal of the vegetations, which is sometimes free, is easily controlled by the application of a solution of silver nitrate, the strength of which will vary according to circumstances.



1. Deaver's urethroscopic tube, with circular cutting curet *in situ*.
2. Deaver's circular cutting curet.
3. Deaver's urethroscopic tube, with stylet.

The only opportunity I have had of using this instrument has been in two cases of venereal warts within the urethra—the histories of which I shall briefly relate:

CASE I.—A. T., aged thirty-two years, came under my notice with a chronic urethral discharge, for which he had been treated without relief. He gave a history of having had two attacks of gonorrhea. Urethroscopic examination showed, in addition to an infiltration of the anterior half of the pendulous urethra, the presence of a number of venereal warts, extending backward from the meatus four and a half inches. The urethra was cocainized, and the warts were removed at one sitting with the circular curet. The bleeding was free, but was controlled without difficulty by the application of a

solution of silver nitrate. The patient reported a week afterward, when a second examination showed the urethra free from foreign bodies.

CASE II.—S. K., aged twenty-eight years, with a history of three previous attacks of gonorrhea, was referred to me by his physician for urethroscopic examination to determine the cause of a chronic urethral discharge. The examination revealed the presence of a stricture of large caliber, three and a half inches within the meatus. Behind the stricture the urethra to the peno-scrotal junction was the seat of large sessile venereal warts. These were readily removed by the circular curet, the stricture having been previously divided by dilating internal urethrotomy.

MEDICAL PROGRESS.

Successful Excision of a Perforated Ulcer of the Duodenum.—DEAN (*British Medical Journal*, No. 1741, p. 1014) has reported the case of a woman, twenty-seven years old, who for about two weeks had suffered from pain in the chest and at the pit of the stomach. There had been some nausea and vomiting and the bowels had not been moved for seven or eight days. About twenty-four hours before coming under observation the woman had suddenly become worse, complaining of severe pain at the pit of the stomach and of a sensation of intense weakness. This was soon followed by vomiting repeated at frequent intervals. The pulse was 120, feeble and regular. The respirations were rapid and irregular in force and rhythm. The tongue was slightly furred and dry. There was uniform tenderness over the whole abdomen; the distention was moderate in degree and the percussion-resonance was increased. The temperature was 100.6°. It was thought that there existed mechanical obstruction of the bowel, with general peritonitis, and it was decided to operate at once. An incision, about three inches long, was made below the umbilicus. On opening the peritoneal cavity a quantity of purulent fluid escaped, and coils of intestine, somewhat distended, intensely congested and covered in places with flakes of lymph, protruded through the wound. No evidence of mechanical obstruction could be found. The incision was therefore extended upward and flakes of lymph were found in the region of the gall-bladder. In the center of one of these flakes gas-bubbles were noticed, forming a kind of froth. A probe introduced into the froth passed into a cavity which was found to be the duodenum, the perforation being situated on the anterior aspect about three-quarters of an inch beyond the pylorus. Around the perforation distinct induration could be felt. This area was excised by means of scissors. The portion removed was elliptic in shape, measuring one and a quarter inches in its long axis, which was parallel with the transverse axis of the gut. The portion excised was found to include the ulcer and a margin of healthy mucous membrane. In the center of the ulcer was a perforation about 2 mm. in diameter. The floor of the ulcer was white and the edges were bound by apparently healthy mucous membrane. The elliptic opening thus made into the duodenum was then closed by means of Lembert sutures. The peritoneal cavity was washed out with a weak boric-acid solution and well sponged, and the wound was closed by stitches passing through the whole thickness of the abdominal wound. The patient was nourished per rectum by enemata and suppositories for seventeen days. She rapidly improved, and was given liquid food by the mouth on the eighteenth day and solid food on the twenty-eighth day. Thirty days after the operation the patient was walking about and eating ordinary food. Twenty-five days later she presented symptoms of intestinal obstruction due to a band. The abdomen was opened and the constriction, which was found to involve the ileum about six inches above the cecum, removed. The woman recovered slightly from the shock of the operation, but never rallied thoroughly. She gradually became weaker, and died about thirty-six hours after the operation. Upon post-mortem examination a considerable amount of lymph was found upon the intestines and the peritoneal cavity contained a quantity of turbid fluid. About three inches above the attachment of the band to the small intestine was a perforation from which intestinal contents had escaped. A little higher up was another perforation. On opening the intestine each perforation was found to be the center of a small ulcer. The ulcers were evidently of acute and recent formation, while there were several other necrotic patches within eighteen inches of the obstructed point. For about half an inch from the pylorus the duodenum was thinner than normal and the peritoneum over it was puckered. The duodenum was quite healthy and presented no traces of past or recent ulceration.

An Unusual Form of Anal Tuberculosis.—KRAMER (*Centralblatt für Chirurgie*, 1894, No. 16, p. 363) has reported the case of a man, thirty-nine years old, who within a period of a year had presented cough, with scanty expectoration, and pain in defecation, with some tenesmus, and with slight hemorrhage at times. An ulcer, about an inch in diameter, had formed in the region of the anus and despite topical treatment had progressively increased in size. There was pain preceding and during defecation, together with some hemorrhage and with failure of nutrition, emaciation, and loss of strength. Physical examination disclosed impairment of the percussion-resonance and fine râles at the summit of the right lung. The inguinal glands were slightly enlarged on both sides. In the region of the anus there existed a fungous tumor, half as large as an ordinary apple, granulating upon its surface and secreting pus. It involved the parts to the right of the anus and extended to the internal sphincter. With a lens the granulations could be seen to be made up of small, grayish-yellow nodules. The ulcerated area was circular in outline; its margins were firm and not undermined; it was pale bluish-red in color; the surrounding tissues were not involved; and there was no indication of a fistula communicating with deep-seated parts. In view of the suffering of the patient it was decided, after suitable preparation, to operate and the entire ulcer was duly excised, the right half of the external sphincter being included in the removal. The wound was sutured and dressed with iodoform and gauze and the bowel tamponed. Primary union resulted and the man was dismissed at the end of three weeks. The symptoms referable to the anus were permanently relieved, although death took place some months after the operation as a result of the pulmonary condition.

Histologic examination of the tissues removed disclosed the presence of tubercles and of tubercle-bacilli. The peculiar and unusual localization is attributed to the lodgment in an abrasion or fissure of the mucous membrane at the anus of tubercle-bacilli contained in swallowed sputum.

Degeneration of the Thyroid Gland in a Case of Arthropathic Psoriasis followed by Myxedema.—SERGENT (*Bull. de la Soc. Anatom. de Paris*, 1894, fasc. No. 6, p. 180) has reported the case of a woman, fifty-five years old, who, ten years before coming under observation, had a generalized eruption of psoriasis in conjunction with other disturbances related to the menopause. The eruption disappeared in the course of a few months, but was soon succeeded by another, and in this way numerous attacks occurred; but finally there was no remission in the skin-lesion. The patient complained also of pains occurring paroxysmally, and referred especially to the small joints of the hands and feet and of the spinal column. The joints of the hands and feet became distorted and nodular, like those of arthritis deformans. The head became strongly flexed on the chest and could not be extended, efforts to do so giving rise to pain. The integument presented a livid, red hue, which was especially marked upon the arms and the thighs, where there was, besides, an abundant desquamation of large scales. In these situations the skin and the subdermal structures were infiltrated by a hard, smooth, and stiff edema, not pitting on pressure. The face was pale, the eyelids swollen, the expression fixed, the cheeks relaxed, the lips large and pendent. The intelligence was obscured and the memory impaired; the patient found difficulty in expressing herself and stuttered in speaking. All of the symptoms progressed slowly until death ensued. Upon post-mortem examination the lungs were found emphysematous and anthracotic; the pericardium was distended with a large quantity of fairly clear fluid; the heart was large and surcharged with fat; the aortic valve was slightly incompetent, and on the larger mitral leaflet was a patch of atheroma. The kidneys were in a state of parenchymatous inflammation. The thyroid gland was much reduced in size; the right lobe was relatively atrophied, while the left had almost entirely undergone calcareous degeneration.

Eight Splenectomies and One Ligation of the Splenic Artery.—At the Eleventh International Medical Congress, recently held at Rome, TRICOMI (*Le Mercredi Médical*, 1894, No. 19, p. 232) reported eight cases in which he had extirpated the spleen for various morbid conditions, with a fortunate issue in all but one. In one there existed splenic leukemia. The proportion of colorless to red blood-corpuscles varied from 1 : 30 to 1 : 10. The spleen weighed a little more than five pounds. The patient died of shock four hours after the operation. In one case a wandering spleen was removed; the blood contained 1 colorless to 410 red corpuscles; the spleen weighed 14½ ounces. In a third case there was ectopia of the spleen; the organ was adherent to the parietal peritoneum in the right epicolic region; the proportion of colorless corpuscles was 1 to 380 red; the spleen weighed 15 ounces. In two cases there existed simple splenic hyperplasia; in one there was 1 colorless blood-corpuscle to 500 red, in the other 1 to 400; the organs weighed respectively more than 2 and more than 2½ pounds. Three cases presented malarial hyperplasia of the spleen; the proportion of colorless to red corpuscles was respectively :- 1 : 350, 1 : 390, 1 : 470. The spleens weighed respectively 2 pounds, 2 pounds, and a pound and a half. In two of the operations median celiotomy was performed; in the others a curvilinear incision was made from the inferior border of the left seventh rib to the anterior superior iliac spine. In all cases the hilus of the organ was ligated *in situ* in three or four divisions; in one instance seven ligatures were necessary. In one case of splenic leukemia, in which the proportion of colorless blood-cells was 1 to 70 red, the splenic artery was ligated. The spleen underwent gradual gangrene, and death took place on the forty-fifth day after the operation.

Posterior Spinal Sclerosis with Homonymous Hemianopsia.—At a recent meeting of the New York Neurological Society, DR. FREDERICK PETERSON presented a married bricklayer, fifty years old, without hereditary taint. He had had a chancre twenty-eight years before, and for four years had noticed that his vision was growing dim, although fourteen years earlier he had had transient diplopia for three weeks. The man had been under observation for a year, during which time there had been little progress in the main features of the case. The knee-jerks were absent, station was swaying, sharp shooting pains were present in the legs, principally the right leg, with dull pain in the back, impaired muscular sense, slowness of micturition, Argyll-Robertson pupils, and some optic atrophy. There had never been crises or trophic disturbances, or girdle-sensation, or anesthesia. The hemianopsia had been noticed for about a year. It was thought to have come on suddenly, but there was no accompaniment in the way of headache, faintness, loss of consciousness, or other disagreeable symptoms. The left visual field was limited to the upper nasal quadrant; the right to the upper temporal quadrant.

THERAPEUTIC NOTES.

Iodoform for Fibrinous Rhinitis.—VLADAR (*Pest. med.-chir. Presse*, No. 16; *Wiener medizin. Presse*, No. 23, 1894, p. 899) has found iodoform to be an excellent remedy—a specific he believes—in the treatment of fibrinous rhinitis. After irrigating the nasal passages, powdered iodoform is insufflated, the patient inspiring deeply. Sometimes cocain is additionally necessary to relieve the irritability and the sense of tension and fulness. It is well to have the patient breathe through a mask of gauze, for the useful effect upon the moisture of the cavities and upon the relaxation of the mucous membrane.

For Bronchitic Asthma.—

℞.—Ext. stramonii . . . . gr. ⅛.
Potassii iodid. . . . . gr. v.
Ammonii carb. . . . . gr. iv.
Tinct. lobeliæ æther. . . . ♏v.
Aquæ chloroformi . . ad ʒss.—M.

S.—A tablespoonful every four hours.

Practitioner.

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SATURDAY, JULY 28, 1894.

THE NEW ASYLUM AT WERNERSVILLE.

ON the 14th instant an informal transfer of the buildings of the new Asylum for the Chronic Insane at Wernersville was effected. The Building-Commissioners, who have about completed their task, resigned the charge of the new and extensive buildings to the Board of Trustees, who henceforth will have the care of the institution. This, practically, inaugurates not only a new *régime* at Wernersville, but also a new era in the history of the chronic insane in this State.

The subject is one of more than passing interest, and therefore deserves brief notice. We shall not attempt either to dictate a policy or to prophesy results; but, in common with many others, we have some opinions, hopes, and fears on the subject of the new hospital, which in moderation may be expressed.

The opportunity is now given, for the first time practically in this State, for the proper trial on an extensive scale of an improved scheme for the benefit of the chronic insane. As we understand the plan, the chronic insane are no longer to be merely incarcerated until they die; to be regarded merely as unfortunate, and, unfortunately, wards of the State; to be kept out of sight with a minimum of scandal and expense. On the contrary, they are to be a part, and an essential, integrant part of a great institution, sharing in its daily life, as far as in them lies, as a vital working factor. While they incur the usual isolation from the great social life of the outside world, which their condition demands and imposes, they are to be ushered into a social sphere where all at least is not blank; where interests may be awakened, where labor may yield its best rewards in some share of mental and bodily health, and where the instincts both of home and of nature may have an incentive and a partial realization. This is a noble ideal, and we doubt not a perfectly practicable one. The bane of our asylums is the torpor which they unconsciously and unintentionally impose. How often do we see the chronic lunatic killing time with hugging his delusions; how often the poor epileptic sitting vacantly waiting for the next fit!

The new asylum at Wernersville is exceptionally well located for the humane project of giving the chronic insane both a field of action and a home. In one of the most superb pastoral valleys of Pennsylvania, surrounded with not lofty but picturesque spurs of the South Mountains and Blue Ridge, it is fixed upon a fertile soil and in a climate of health-giving qualities. On the neighboring hills are a group of sanitariums which for years have demonstrated to the public the wholesomeness of this locality, while on the surrounding plain is an agricultural wealth which has always been the pride of the State. It is not easy to see how the natural advantages of the place could be surpassed, or how the authorities could have acted more wisely in selecting a site. The trustees will have under their care a large tract of farm-land, which will contribute its share to the support and health of the community.

The internal administration at Wernersville, and its results, will be watched with much interest. The design is to exempt as much as possible the physician in charge from the burden of administrative details; but with this there is no design to curtail his legitimate authority. This plan is in line with advanced thought on the subject of the internal administration of asylums. As we all well know, it is still subject to fierce criticism, and by none so fierce as by the asylum-superintendents, who suffer the most, and proclaim their sufferings the loudest, from the present infliction of housekeeping duties. This is one of the paradoxes, or anomalies, of present asylum-politics, and it is one

which, for better or worse, the trustees at Wernersville have faced squarely. The one disadvantage that their otherwise admirable site imposes, is, perhaps, its remoteness from large centers of scientific and medical activity. But this is not insuperable. The trustees have started with a good staff, who need have no difficulty, if they honestly desire, even in the rural depths of Berks County, in keeping up with the times.

We have been surprised sometimes to hear it said that the chronic insane do not offer subjects for fruitful scientific investigation: as if only the acutely insane are the legitimate objects of study for the pathologist. We protest earnestly against this erroneous thought. We beg to remind the reader that CHARCOT established at once his fame and the modern science of neurology on the studies that he made on the neglected old women in a Paris almshouse. Of the acutely insane few die, and the friends of fewer still grant autopsies. The morbid anatomist finds his best field in such an institution as that at Wernersville. We hope that it will not be said of it as of a similar hospital in another State, that it has no pathologist and that not ten per cent. of the fatal cases are examined *post mortem*. Let us trust that good clinical and pathologic methods will prevail, as well as good housekeeping.

We understand that a formal opening of the Wernersville Asylum will be held in the autumn. If so, we hope that it will cause to dawn then upon the profession and the public what an admirable institution of the kind we have in Pennsylvania.

THE TRANSMISSION OF TUBERCULOSIS THROUGH INFECTED MILK AND MEAT.

THE communication of tuberculosis by the flesh and milk of tuberculous animals has been sufficiently demonstrated to justify and demand the employment of stringent measures to lessen the possibility of such propagation of the disease. The unexpected discovery of tuberculosis in a herd of apparently healthy and well-nourished milch-cattle is not an infrequent occurrence, and a sufficient number of observations have already accumulated to demonstrate the utility and value of tuberculin as a diagnostic agent. It is fair to presume that if the same rigid measures of inspection and the same precision in diagnosis as have been employed in these isolated cases were extended to all cattle in the State, the results would exhibit a far greater prevalence of the disease than has ever been suspected.

At present, except in a very limited number of States, the consumer has no guarantee that such standard articles of food as meat and milk are free from disease-producing germs, simply because of the absence of well-digested laws regulating the preparation and sale of these commodities. Milk-inspection, as ordinarily practised in our towns and cities, valuable as it may be in detecting adulteration, is useless in protecting the public against the danger arising from those subtle pathogenic organisms which are at times conveyed by milk. In order to meet and subvert this danger new agencies must be invoked.

Inspection by the State—frequent, intelligent, and rigid—should be extended to the dairy-farm itself, and should embrace not only the thorough investigation of the cattle, but also an inquiry into their care and environment, so that in the course of time tuberculous disease may be completely eradicated and its re-introduction carefully guarded against. Provision should be made, by adequate laws, for establishing such inspection at the very source of danger, as a safeguard not only against tuberculosis, but against all diseases of an infectious type.

The enactment of such laws is always attended with difficulty, on account of the combination of adverse interests, and this opposition is predicated upon the assumption that vested rights are to be interfered with and pecuniary losses imposed by arbitrary administration of the law. Such opposition is to be overcome by making the laws judicious and mutually protective by not only guarding the public health, but also by protecting the interests of the dairyman as well.

The question of indemnification for loss sustained by the destruction of cattle has always been a stumblingblock in the way of this particular legislation. It seems fair and equitable that provision should be made for such reparation. The benefits are universal, and the loss should therefore be shared by the community.

It may possibly be remembered that at the last session of the Pennsylvania State Legislature an earnest effort was made to secure legislation on this important subject, but without avail. The necessity for legislation was admitted, but through the contentions as to the form, the bill failed to secure the necessary support.

Something more is necessary to secure protective

laws than a clear and conclusive argument before our legislators. Public opinion must be molded to a comprehension of the need of measures for guarding the public health, so that the men in our legislative councils shall be obliged to give the necessary relief. A weighty responsibility rests upon the medical profession in educating the masses in the right way of thinking on this subject. To the members of the profession is offered the opportunity for advancing knowledge, and they were derelict in their duty did they neglect an obligation which they owe to their fellow-citizens.

REVIEWS.

CLINICAL GYNECOLOGY: BEING A HANDBOOK OF DISEASES PECULIAR TO WOMEN. By THOMAS MORE MADDEN, M.D., F.R.C.S. Ed., Obstetric Physician and Gynecologist, Mater Misericordiæ Hospital, Dublin, etc. Philadelphia: J. B. Lippincott Co., 1893.

THE able and conscientious work of this distinguished surgeon and writer throughout a period of many years has justly won for him the respect and admiration of his confrères in the domain of female pelvic and abdominal disease. The volume which he now offers to the medical profession is presumably the offspring of his varied experience, and as such has been seized upon assiduously by the gynecologists who have hoped to profit by the fruits of a busy and successful life spent in active clinical work. In noting the radical changes that have taken place in the methods of gynecologic treatment during the past quarter of a century, Dr. Madden pays a graceful tribute to the American surgeons who, he claims, have surpassed all others in their contributions to progressive gynecology. In many respects, the author in his management of the various pathologic conditions has kept pace with the advanced spirit of the times. Electricity as a gynecologic curative agent has failed in his hands—in this he is in accord with the other leading abdominal surgeons of the world. He recognizes the valuable assistance rendered by ichthyol in pelvic and vaginal disorders, and recommends it as one of the main aids in gynecologic therapeusis. While many such features as these, scattered throughout the volume, render the reading interesting and instructive, there are some startling deviations from the recognized practices of the day, together with omissions of matters of vital importance. Tuberculous endometritis is not mentioned at all, and tuberculous salpingitis, although as shown by statistics (*Johns Hopkins Hospital Reports*) it is present in 8 per cent. of all appendages removed, is merely mentioned as one of the possible varieties of chronic disease of the tubes. The treatment of ovariotomy is notably antiquated. The author adheres to the primitive method of cauterization of the pedicle with the thermo-cautery; in closing the abdominal wound he employs silver-wire sutures, which are now abandoned in favor of silkworm-gut by the vast majority of leading operators; unless there be a spontaneous action, the bowels are not opened until the tenth day, nor are the sutures removed until the same day, the patient thus being exposed to temperature-elevations and to the development of suture-abscesses. In reparation of perineal lacerations, Tait's operation is preferred, notwithstanding the acknowledged superiority of Emmet's method. As an anesthetic, the dangerous and uncertain A. C. E. mixture is recommended. Such failings as these mar a book otherwise acceptable and strong. The work of the publishers has been well done, and the illustrations and diagrams are numerous and valuable.

THE ESSENTIALS OF CHEMICAL PHYSIOLOGY: FOR THE USE OF STUDENTS. By W. D. HALLIBURTON, M.D., F.R.S., Fellow of the Royal College of Physicians, etc. 8vo, pp. xl, 160, and index. London: Longmans, Green & Co.

DR. HALLIBURTON is well known to the profession by his contributions to current literature and to students by his comprehensive *Text-book of Chemical Physiology and Pathology*. The present work is not a mere condensation of the larger, but is intended as a guide in the practical study of physiologic chemistry, while giving also brief summaries of the existing knowledge. It is excellently printed and largely illustrated with well-executed cuts.

The text represents, of course, the accepted views on the many complex topics in this department of science. It is to be regretted that writers and teachers of physiology are so frequently indifferent to accuracy in expression of chemic terms. In using the terminology of any biologic science, the physiologist would certainly seek to conform to standards accepted by the authorities, yet in the chemic nomenclature a looseness prevails which is exasperating. The phraseology of the present-day chemistry is fairly exact and systematic, and an effort should be made by all writers to adhere to its principles. We are moved to these remarks by noticing on page 16, the now antiquated and absurd statement that the fats are compounds of fatty acids with glycerin. Under glycerin, the alternative and now approved name, glycerol, is given, but is not again used. So also, such terms as "potassium hydrate," "phosphate of lime," are unwise. The use of such phrases in a text-book like this one interferes with the satisfactory work in the chemistry department of a college. The authority of the distinguished author is such that a student may feel justified in using erroneous or antiquated phrases because he finds them in good company. It is pleasing, however, to note that these defects are not frequent, and that generally the nomenclature is correct and the composition of all important bodies correctly given. The detailed statement of the composition of the urine is a decided improvement upon the confused tables often given, but it would be still more satisfactory if the exact molecules indicated by the terms sulfuric and phosforic acid were indicated. The work is certainly a useful addition to our text-book resources.

VENEREAL MEMORANDA. A MANUAL FOR THE STUDENT AND PRACTITIONER. By P. A. MORROW, A.M., M.D., etc. 12mo, pp. 332. New York: William Wood & Co., 1894.

WE are told that the aim of this somewhat oddly-named volume is to give a concise exposition of the

nature and treatment of venereal diseases. We are also told that "in the effort to condense so much important material within necessarily narrow limits the sententious style of expression adopted naturally assumed the form of aphorisms." But the aphoristic feature seems to consist merely in the arrangement of the matter in short paragraphs. It is surely not sententious—we doubt if it is correct—to say: "A leukorrhea which would have remained innocuous after a single coitus takes on irritatant properties under the influence of repeated intercourse, developing a potentiality for mischief which it did not before possess;" or, "The man who exposes himself to a possible source of contagion should not linger long in the lap of Venus. 'Cito tuto et, etc.,' is a safe motto."

Again, we are told in the preface to this second edition, for such it purports to be, that "full recognition has been given to modern microbian (*sic*) theories in connection with the etiology of these diseases;" yet we look in vain for any hint or trace of allusion in the text to such theories.

We do not think this book will benefit any class of readers, or add to its author's reputation.

SYLLABUS OF LECTURES ON THE PRACTICE OF SURGERY. ARRANGED IN CONFORMITY WITH THE AMERICAN TEXT-BOOK OF SURGERY. By N. SENN, M.D., Ph.D., LL.D., Chicago, Professor of the Practice of Surgery and Clinical Surgery in Rush Medical College, etc. Small 8vo, pp. 221. Philadelphia: W. B. Saunders, 1893.

THE distinguished author of this little work may be allowed to state its purpose in his own words: "Every teacher of surgery must have felt the need of some short guide to aid him in the lecture-room in presenting the various subjects in a systematic, clear, succinct, and practical manner. The student of surgery during his early college experience is often bewildered by what he hears and reads, and keenly experiences that want of something which should enable him to separate the chaff from the wheat, and to memorize facts which he is expected to retain and apply at the bedside during his future professional career. This little book has been written to meet these requirements."

We must confess that we do not think any professor of surgery of our acquaintance would use this book as a "short guide" in the lecture-room, although it might answer, like the table of contents in a text-book, as an aid in the arrangement of his material. Nor can we see how it can help the bewilderment of the student. He ought not to have any chaff given him; and it seems to us that his facts will be of more use to him if they are in his mind as parts of a systematic and philosophic whole, than if they are "memorized." The true value of such a book as this, and we do not rate it highly, is as a convenient table of subjects to be studied and an exhibit of their main points. As a source of information it is too terse and fragmentary to be of any avail to the tyro, while the experienced and well-informed do not need it.

Our comment is upon the avowed purpose of Prof. Senn's book. His intelligence and learning qualify him for any surgical task, and he has done this one well. But we think it hardly worth the doing.

CORRESPONDENCE.

POTASSIUM PERMANGANATE IN OPIUM-POISONING.

To the Editor of THE MEDICAL NEWS,

SIR: At this time, when so much interest is felt in the recent commendation of potassium permanganate as an antidote to the poisonous effects of opium, every personal experience in this connection should prove of interest.

On June 11th, about 10 P.M., I was summoned to see Mr. R., who had taken about a half-hour previously two ounces of laudanum. Upon my arrival I found him unconscious, and breathing with difficulty, with the typical pin-hole contraction of the pupils. I immediately wrote a prescription for a solution of potassium permanganate, of the strength of six grains to the ounce, and despatched a messenger with it to the nearest drug-store a few blocks away. I then gave a hypodermatic injection of apomorphin hydrochlorate, gr. $\frac{1}{10}$, and thus thoroughly emptied the stomach of that portion of the drug that had not been absorbed, and directed that some strong coffee be prepared at once. I gave atropin sulph. gr. $\frac{1}{100}$ hypodermatically, at intervals of fifteen minutes, until three doses were taken, emptied the bladder with a catheter to prevent reabsorption, also using wet towels by flagellation over the chest to stimulate respiration. All efforts at resuscitation seemed futile; the pulse, at first full and bounding, became weaker, the breathing exceedingly difficult and labored, with the intervals between the respirations rapidly lengthening and the pupils gradually dilating, until at 11 P.M., when the permanganate-solution was handed me I had been for more than fifteen minutes able to detect scarcely any pulse-beat, and the respiration was little more than an occasional gasp. The delay in procuring the solution was due to the fact that the drug-clerk had to be awakened, and after a search for the desired article failed to find it, having only just gotten his stock moved in from another building. This necessitated going several blocks further on, and rousing a second clerk to have the prescription compounded, so that it was quite an hour from the time I arrived, and an hour and thirty minutes from the time the laudanum was taken, before the permanganate-solution could be used. I immediately injected into the patient's arm twenty-five minims, and succeeded in getting him to swallow probably a teaspoonful. Within a few minutes the respiration was somewhat improved, and I was able to detect a faint beating of the pulse. I repeated the injection, which was followed by still further improvement in the symptoms. The hypodermatic injection of the solution was then continued at intervals of fifteen minutes until seven were given, three in the right arm, two in the left, two over the region of the heart. The patient was walked more or less constantly. After each injection decided improvement was noted, so that whereas at 11 P.M. he was in a state of profound coma, at 1 A.M., or two hours thereafter, and three and a half hours from the time of taking the laudanum, which was equivalent to sixty-four grains of the crude opium, and sixteen of its principal alkaloid, morphin, the patient was seated on the veranda conversing quite intelligently with me and the members

of his family. I then deemed it quite safe for him to retire for the night, but placed a close watch over him. During the succeeding day he remained in bed, but on the following morning he was at his office as usual. I think I can safely say that but for the timely arrival of the permanganate-solution he would undoubtedly have been dead within fifteen or twenty minutes. I may also add that for several days there was considerable inflammation at the site of each puncture, and I directed that flaxseed-poultices be applied, and be permitted to remain over night, whereupon it promptly disappeared.

Respectfully,

C. EVANS JOHNSON.

ATLANTA, GA.

UNPROFESSIONAL CONDUCT, OR IMPOSITION?

DR. JOHN C. SUNDBERG, U. S. Consul at Bagdad, sends us an advertisement of "animal extracts," taken from a New York daily newspaper, and expresses wonder whether the physician, according to whose formula the "extracts" are prepared, is guilty of unprofessional conduct or the "chemical company" by which they are manufactured, of unauthorized use of the physician's name. "Cardin," he goes on to say, "is of Eastern origin, children's hearts being considered specific in the treatment of heart-disease and carcinoma, and an hereditary Bagdad saint, with a saintly pedigree dating back eight centuries, is reputed to have agents constantly in the field to capture children, that he may eat their hearts. It is highly probable that the Babylonian fakirs gave their illustrious American confrère the first idea of the therapeutic value of heart-extract and other such preparations."

SOCIETY PROCEEDINGS.

AMERICAN ORTHOPEDIC ASSOCIATION.

Eighth Annual Meeting, held at Washington, D.C., May 29, 30, 31, and June 1, 1894.

FIRST DAY—MAY 29TH.

DR. ROYAL WHITMAN, of New York, read a paper entitled "Observations on Bending of the Femur in Adolescents." This condition, he said, developed in adolescents who had grown very rapidly, or who had been subjected to overwork or strain. In 1889 E. Müller had reported, as a new type of disease, four cases of bending of the neck of the femur. During the past two years four such cases had come under Dr. Whitman's observation, two of which he reported. The first of these cases was in a boy, who for a year, without known cause, presented a gradually increasing limp, and for six months had found it necessary to use a cork sole. The appearance was that of congenital dislocation of the hip. The actual shortening was three-fourths of an inch, and the apparent shortening was three and a half inches. There was no limitation of flexion, extension, or rotation of the limb. The movements were free and painless. The head of the bone was in the acetabulum. In the second case the diagnosis had been made at an earlier stage. The patient was a boy of sixteen years, in whom there was a bending of both femoral necks. At the time he came under observation there was nothing of special importance, except for slight eversion of the feet and flat-foot. There was slight knock-knee; the trochanters were a little above Nélaton's line; the gait was somewhat rolling in character, and abduction was about one-third of the normal. Rest and gymnastic exercises were advised, but were not carried out. The boy appeared three months later, with a much worse gait. Behind each trochanter was a deep sulcus; the legs were adducted, and on attempting to flex them they were immediately crossed one upon the other. There was no pain or spasm. In the course of ten months adduction had increased, so that it was only with the greatest effort that the legs could be passed by one another. It was believed that the bending of the neck had nearly reached its limit, and it was therefore proposed during the summer to divide the leg below the trochanter. In all the cases flexion of the thigh has caused the trochanter to be more prominent.

The bending appears to be a comparatively rapid process, and the head of the bone is usually depressed downward and backward in the line of least resistance. When the condition is one-sided, the symptoms are stiffness and limp due to shortening; if both sides are affected, adduction of the leg causes a peculiar, rolling gait, due to the interference of the knees. The character of the pain is similar to that seen in knock-knee and the bow-legs of adolescents. The treatment consists in (1) removing the exciting cause, which is usually overwork or some special occupation causing strain on the parts; (2) local massage, manipulations, and passive motion in the direction of the restricted motion; (3) osteotomy below the trochanter. In the stage in which these patients usually presented themselves, the diagnosis offered no particular difficulty. In all cases of dislocation upward, the neck of the displaced bone could be traced upward and the head of the femur made out; in bending of the femur only the prominent trochanter could be felt. If the distortion were due to necrosis or other chronic disease, the evidence of such disease would be apparent. There was no local swelling or infiltration, and the abduction and inward rotation were the only motions which were limited. When unchecked the deformity showed a marked tendency to increase upward.

DR. WALLACE BLANCHARD, of Chicago, then exhibited his hip-splint, which he said he had used with satisfaction for twenty-two years. Longitudinal traction was made by adhesive straps, and lateral traction by a band around the thigh. The main strip extending down the back of the thigh and leg secured the very necessary immobilization. The splint should be molded to the body and limbs, and should not cause pain. It was both a bed-splint and a walking-splint, and should not be removed except for repairs. From eight to nine pounds of traction were usually sufficient for children—although fifteen or twenty pounds might be necessary for the first day or two.

DR. A. M. PHELPS, of New York, discussed "The Question of Priority in the Application of Lateral Traction to relieve Intra-articular Pressure in Hip-joint Disease." His first paper on this subject had been published in the *Medical Record*, May 4, 1889, and in August of the same year, Dr. Blanchard had published a paper in which he stated that he had been using lateral traction. Sayre claimed to have applied lateral

traction to a patient in 1872, but, as a matter of fact, the straps were applied to overcome the inward rotation. The Germans had mentioned lateral traction in 1873, but only as an argument against the usual form of traction, as they did not believe in traction at all.

In the discussion on the foregoing, DR. A. M. PHELPS said that the chief objection to Blanchard's splint was the fact that it did not extend below the bottom of the foot.

DR. BENJAMIN LEE, of Philadelphia, remarked that in the hip-splint used by Dr. Taylor and himself in 1862, he thought lateral traction was made.

DR. WHITMAN said that while he believed the principle of lateral traction was good, the mode of its application in Dr. Phelps' apparatus seemed very inefficient.

DR. PHELPS said that if the splint were bent away far enough from the thigh, and the traction were applied just above the knee-joint, it would prove effectual in relieving intra-articular pressure.

DR. L. A. WEIGEL, of Rochester, reported two cases of congenital dislocation of the hip. The first was in a boy who had been delivered after a difficult labor resulting from a foot-presentation. There were a number of convulsions during the first three or four days of life. An abnormal condition of the hand was noticed soon afterward, but the disability of the leg was not observed for a considerable time. The child was inclined to be vicious and destructive. There was a marked spastic condition of the left arm and it was shorter than its fellow. The head of the femur was freely movable on the dorsum of the ilium, and with slight traction and rotation the head could be drawn down to its normal position. It easily returned to the former position. The existence of a rudimentary acetabulum could not be determined. The ophthalmoscope showed double optic neuritis and secondary atrophy from some intra-cranial cause. The long traction-splint was applied for the purpose of maintaining the limb in proper position and enabling the child to walk. Massage was ordered for the arm. A recent examination had shown remarkable improvement. Three weeks ago the boy had begun to stand, and was now walking; the hand could not be opened voluntarily. On removal of the splint, however, the hip returned to its former abnormal position just as readily as before. The mental condition was decidedly improved. In the second case the child had been noticed shortly after a normal delivery to have an abnormality of the right hand, and on beginning to walk, a "hip-limp" was detected. There was a well-marked spastic condition of the arm and leg, and a displacement of the right hip. The dislocation of the hip was readily reduced. The acetabulum was but slightly developed. The mental development of the child was normal. There was no history of instrumental labor, premature birth, or asphyxiation, yet the tonic contraction of the arm was greater than in the first case.

DR. BENJAMIN LEE referred to a case first seen about sixteen years ago, and presenting a spastic condition of the left arm. When seen again quite recently, all of the movements of the hip were somewhat restricted.

DR. F. S. COOLIDGE, of Chicago, suggested that Dr. Weigel's case might have had a dislocation resulting from severe spastic contraction of the foot from disease of the brain.

DR. WEIGEL replied that the spastic condition had existed before birth.

DR. A. E. HOADLEY, of Chicago, read a paper on "The Etiology of Deformities in Knee-joint Disease." His paper was intended as an answer to one read by Dr. Phelps at the last meeting of the Association. He said that anatomy taught that the knee-joint was not a simple hinge-joint, inasmuch as there was no common center around which the head of the tibia revolved. Again, as the condyles were of unequal length, there was a rotation of the tibia upon itself, thus making the knee-joint a very complicated joint. The flexors and extensors were equally balanced in a fully extended limb, but as flexion progressed, the flexors were diminished in power because the tendon of the quadriceps constantly changed its direction until it reached 135°, when the flexors actually became extensors. Thus, a leverage of one and a half inches was gradually diminished to no leverage at all at 135°. Beyond this point it was impossible for flexion to occur voluntarily. Measurements in a number of students showed that with the leg straight, the power of flexion was about seventy-five pounds; when lying down on the back with the leg flexed at right angles and the knee pressing against a block the power of flexion was only about forty pounds; while with the leg at 90° the power of extension was about one hundred and seventy-five pounds. The strongest point of the flexors was weaker than the weakest point of the extensors, and between 90° and 130° there was no appreciable difference in the power of the extensors. In conclusion it was said that the preponderance of power was in favor of the extensors; it had nothing to do with producing the deformity of the limb. Nor was it thought that there was anything in the clinical history to show that the extensor muscles atrophied any faster than the flexors.

DR. W. E. WIRT, of Cleveland, Ohio, gave a mathematic demonstration of the method of determining the amount of force and of the amount of friction.

DR. WHITMAN thought that one important factor—the gastrocnemius muscles—had been left out of consideration.

DR. A. M. PHELPS said he believed the propositions in the paper were incorrect. The results which he had himself obtained by experiment tallied very closely with those of Horton, of Dublin, and represented a force of about thirty-five pounds, while Dr. Hoadley had estimated the force at seventy-five pounds. The same might be said about the other figures. It should not be forgotten that when the leg was flexed the quadriceps muscle acted over a pulley, and its force was necessarily diminished by friction. When in the straight position there was no friction, but when flexed, there was a force so great that it might even cause fracture of the patella. In his own experiments he had found that when the leg was perfectly straight the extensors were at the greatest possible advantage, and that the amount of resistance was two hundred and forty pounds, as against one hundred and thirty-six pounds when the limb was flexed. Again, owing to the insertion of the muscles, they were acting on a lever represented by the distance from the attachment of the muscle to the center of the bone. As the limb was flexed the lateral ligaments were relaxed, and the biceps tendon, being at-

tached to one side of the end of the fibula, was really attached to a lever, having a length equal to the distance from the center of the condyle to this attachment of the muscle. This necessarily rotated the limb outward. His conclusions were that the typical deformity was produced by a voluntary effort to prevent pain by relieving intra-articular pressure.

DR. JOHN RIDLON, of Chicago, pointed out that no account had been taken of the fact that as a muscle approached its point of full contraction its power diminished.

DR. HOADLEY said that he had considered this point in a portion of the paper which he had omitted in reading. The friction produced by the tendon passing over the pulley was so slight that it could be neglected. Dr. Phelps' experiments had been confined to only one man, whereas his had been made on eighty students.

DR. E. H. BRADFORD, of Boston, made some remarks in connection with the presentation of a pathologic specimen from a case of Hoffa's operation for congenital dislocation of the hip. The object of this operation was to make a new acetabulum for the reception of the head of the femur, and Hoffa claimed that as the acetabulum was always the thickest portion of the bone, there was no danger of perforation in curetting out this new acetabulum. That this claim was incorrect was shown in the specimen. It also showed that, although it was not detected on palpation during the operation, the original acetabulum was well developed. Attention was also called to the fact that when the head of the bone was placed in the acetabulum the limb could not be straightened, apparently because of the obstacle offered by the Bigelow Y-ligament. It was, therefore, suggested that the capsule be divided anteriorly. The belief was expressed that if these cases were carefully operated upon, the condition would prove to be a curable one.

Dr. Bradford also presented a specimen of rachitic deformity of the hip in an adult, and a knee-joint showing a periostitis just above the head of the tibia.

DR. WHITMAN said that Lorenz's operation was practically the same as the modified operation suggested by Dr. Bradford. He approved of this operation, and agreed with Dr. Bradford as to the obstacles to reduction. He emphasized a point that he believed was not generally fully appreciated, viz., that there was great disability, and often pain or discomfort in these cases of congenital dislocation of the hip.

DR. WEIGEL admitted the great amount of disability present in cases of double congenital dislocation. In his cases there had been no difficulty in reducing the deformity. As he believed that in all cases the acetabulum was not rudimentary to the same degree, he thought some cases might be relieved by continued contraction.

DR. DE FOREST WILLARD, of Philadelphia, said that he thought the acetabulum was more seriously deformed in most cases than it was in the specimen that had been presented. When there was a long, oval-shaped acetabulum he did not believe operation was likely to be successful. He had seen great disability, but never true pain.

DR. BERNARD BARTOW, of Buffalo, reported the case of a child, three years old, in whom the use of traction continuously for a period of about six months resulted in maintaining the head of the bone in its proper position, so that it would not be dislocated by the application of a reasonable degree of force. This would seem to prove that the acetabulum was fairly developed in some of these cases.

DR. WIRT said he had seen cases of this kind in which there had been actual pain on walking.

DR. PHELPS said that as not a single case of congenital dislocation had been cured by mechanical treatment, and a cure had been effected by Hoffa's operation, this operative treatment was the only method worthy of trial. If suppuration occurred, there would be reflex spasm, and this would result in serious deformity.

DR. BRADFORD said that, judging from an examination he had made of three other dried specimens in the Warren Museum, there was a ridge of bone at the upper and posterior edge of the acetabulum in older subjects, but in children the condition seemed not to be due to an arrest of development, but to genuine *congenital* dislocation. Suppuration following Hoffa's operation was a serious complication. While admitting the great value of operative treatment, Dr. Bradford still felt that as there was not much disability in some adult cases, mechanical treatment should be tried when it held out any prospect of success.

SECOND DAY—MAY 30TH.

DR. C. G. PAGE, of Boston, by invitation, read a paper on "Lateral Traction in Hip-disease." He said that lateral traction alone did not seem sufficient to give relief. The object of traction was to overcome spasm and "distract" the joint, if possible; and to do this, the head of the bone must move practically in the axis of the neck. Such a force was not at our command, but the resultant of two forces enabled us to accomplish this in practice. The point of application of the lateral force was necessarily considerably below the head of the femur. It had been objected that lateral traction when applied high up shortened the muscles and tended to draw the bone toward the acetabulum; but it should be remembered that the muscles became lengthened and adapted to the new condition. About five pounds of lateral traction should be used to ten pounds of longitudinal traction, and it should be applied at 15°.

DR. PHELPS said he was prepared to indorse nearly all the conclusions announced, but he thought the proportion between the two forces should be about two of lateral to eight of longitudinal traction.

DR. V. P. GIBNEY, of New York, read a paper entitled "Final Results in One Hundred Cases of Operation for Deformities following Hip-joint Disease." He suggested that it might possibly be better while the disease was still active to give less attention to simple efforts at aiding Nature in protecting the joint, and more attention to the operative correction of the deformities resulting from the disease. As a rule, the long traction-splint prevented exacerbations, and gave the patient comparative comfort. He had had an opportunity to observe for a period of a dozen years the sufferings of those in whom hip-joint disease was allowed to run its natural course, and he had also had an opportunity to observe for a similar period the results of the use of portative apparatus, so that he felt he could hardly be accused of presenting the subject from only one point of view. He reported several illustrative cases, and presented in carefully

tabulated form the results of his operations, and of the treatment with splints and with the weight and pulley.

DR. WIRT said he had witnessed some of the operations done on these cases, and had followed them for for some time afterward. He thought the method of treatment by osteotomy exceedingly useful; it had certainly given him good results.

DR. S. KETCH, of New York, thought Dr. Gibney's results indicated that the use of force in the reduction of the deformity was a dangerous practice. In his opinion, it was a plan of treatment that should be abandoned.

DR. WHITMAN said that Dr. Gibney seemed to be wavering in his belief as to whether it was profitable to prevent these deformities, as it was so easy to correct them afterward. Surely Dr. Gibney was familiar with many neglected cases in which there had been adduction, flexion, and upward dislocation. The latter condition could not be corrected by any operation. He felt sure that the remarks made had been directed chiefly against the dispensary class of cases.

DR. ANSEL G. COOK, of Hartford, detailed two cases in which he had obtained gratifying results from this method of performing osteotomy.

DR. GILLETT asked if Dr. Gibney would operate for the relief of the deformity in cases in which there were discharging sinuses.

DR. GIBNEY said he would wait for the sinuses to close, and would hasten this process by curetting them. For some time past he had been of the opinion that in some cases in which there were acute symptoms, and deformity already existed, it was best not to forcibly correct the deformity, for this was liable to cause the formation of an abscess in some inaccessible part. In many cases of deep femoral abscess in which it was practically impossible to properly cleanse the abscess-cavities, he thought it wise to let them alone until the disease had exhausted itself. He wished to place himself on record as unalterably opposed to allowing deformity to develop in any stage of the disease; but when changes had occurred in the shaft and neck of the femur as a result of the exanthemata, before the cases came under observation and when there was probably fusion of the neck and head with the acetabulum, he preferred to let the disease run its course. He did not agree with Dr. Ketch that the method of forcible correction should be abandoned. There were many cases with acute symptoms in which no splint could be applied until the deformity had been corrected, and in which traction in bed could only be made upward toward the ceiling. His experience had taught him that after the correction of the deformity, particularly after osteotomy, a short Thomas splint should be worn for some time after the operation.

DR. PHELPS said that in nearly all cases the deformity could be overcome by rest in bed and the use of a weight and pulley.

DR. HERMAN MYNTER, of Buffalo, read by invitation a paper on "Excision of the Wrist by a New Method." He said excision was usually resorted to only in old, neglected cases, in which it was only possible to remove the fattily degenerated and softened bones piecemeal, thus leaving much tuberculous matter in the wound. He asked what would be the result if the knee-joint, or any other joint, were exsected in such a way. Professor Stuttgar, of Copenhagen, had advocated a new method of making the incision, with the object of gaining better access to the metacarpus. It includes a supplementary incision made longitudinally between the third and fourth metacarpal bones. The superficial and deep palmar arches must, of course, be ligated. Dr. Mynter had found it unnecessary on the palmar side to extend the incision further than the base of the thenar. The whole carpus could be widely opened, and it was extremely easy to excise it in two portions. The cavity was packed with iodoform-gauze, and the wound in his case healed by first intention, except where the gauze was brought out. Eight weeks after the operation the woman was able to extend and flex the wrist and move the fingers.

DR. F. S. COOLIDGE, of Chicago, made some remarks on "Osteoclasis," and demonstrated the action of the Lorenz osteoclast. He said that Lorenz had been using this instrument for six years, and had attained most excellent results. The instrument was used for the correction of deformities of the leg. It consisted of two plates, the one movable and the other fixed. The long handles gave tremendous leverage, but the screw-thread was so fine that it admitted of perfect control. The plates were placed at such an angle that in the performance of osteoclasis they would usually be at right angles to the bone at the moment of fracture. With this instrument osteoclasis rivalled osteotomy in its exactness. It fractured the bone in the desired direction, away from the deformity, and within a fraction of an inch of the selected point. The fracture was generally sub-periosteal. With this instrument knock-knee could be even over-corrected at one sitting, without rupture of the ligaments of the knee. A knock-knee brace should be worn constantly for one year afterward, at which time a cure would have been effected. The pain after the operation lasted usually only about twenty-four hours. This method corrected the deformity as rapidly as osteotomy, and without its dangers, slight though they were.

DR. HALSTED MYERS, of New York, said that if it were necessary to wear a knock-knee brace for one year after the operation, the method possessed no advantage over purely mechanical treatment, for a cure could be effected with the latter in about the same time.

DR. PHELPS said that if the Rizzoli osteoclast were made sufficiently rigid, it would be found about the best instrument obtainable. Next to this came the Grattan osteoclast. He thought osteotomy should not be performed when osteoclasis could be done, but the latter was not suitable for producing fractures near a joint. From our knowledge of the pathology and etiology of genu valgum it was hardly to be supposed that the deformity could be removed by osteoclasis without either osteotomy or osteoclasis in the shaft of the bone.

DR. COOLIDGE said he considered that the instrument accomplished its best work in the correction of the anterior and posterior flexions of the knee-joint.

DR. ROYAL WHITMAN, of New York, opened the discussion on the subject of "Flat-foot." He said that Dr. Shaffer's theory was that flat-foot was caused by primary contraction of the tendo Achillis. Each individual muscle had been accused in turn of being the primary cause of this affection. In most of the theories that had been advanced, he thought effect had been mistaken for cause. Flat-foot was the result of the relative disproportion between the work to be performed and the

weight to be supported, and the weight of the supporting structures. It was most commonly brought about by habitual improper attitudes. Flat-foot was a dislocated foot, and hence the resistance of the tendo Achillis was often apparent rather than real. If flat-foot was to be cured, this dislocation must be reduced, and kept reduced. Finally, the balance of power must be regulated by treatment directed to the muscles, and the position assumed by the foot. Flat-foot, according to his experience, was an eminently curable affection, the age of the patient and the duration of the condition being important factors. He did not believe in cutting operations of any kind, as he had never seen a permanent or satisfactory result from them. These remarks were based on an experience with upward of one thousand cases of flat-foot.

DR. WEIGEL said he had been much pleased with Dr. Whitman's method of treatment. He had simplified somewhat the preparation of the pattern by making it out of three layers of crinolin, applied to the foot in strips dipped in thick plaster-of-Paris cream. The plates were cast after this pattern, and were made of an alloy, the chief ingredient of which was phosphor-bronze.

DR. ANSEL G. COOK, of Hartford, said that if the old flat-foot springs were properly made they would meet every indication for treatment.

DR. WHITMAN objected to these springs strongly, on the ground that they allowed a lateral broadening of the foot.

DR. COOK replied that the lateral pressure was furnished by the patient's shoe.

DR. A. JACOBI, of New York, by invitation, opened the discussion on "Rachitic Deformities." He spoke of the rapid increase of rickets in this country during the past thirty years as a result of unrestricted immigration, and said that in the future the treatment of this condition would be a social as well as a medical problem. He then gave a detailed and graphic description of the various lesions and deformities due to rickets. Referring to the head, he said that it was possible for craniotabes to entirely disappear if the rachitic condition which had produced it had not lasted for any great length of time. The frequent occurrence in rickety children of the so-called "Hutchinson teeth" had probably given rise to the belief that all rickets was the result of syphilis. Many cases of so-called "growing pains" were nothnig more than examples of rachitic epiphysitis. It should be remembered that in rickets the muscles suffer as well as the bones, and that both the voluntary and involuntary muscles may be involved. Rachitic pseudo-paralysis was not paralysis at all, but simply a weakness of the muscles. The heart was usually rather large, and the arteries small. The muscular coats of the stomach and intestine were involved, and hence constipation was an early and prominent symptom.

DR. BENJAMIN LEE, of Philadelphia, in continuing the discussion on rachitis, spoke particularly of "Its Various Manifestations, Diagnosis, Differential Diagnosis, and Prognosis." He paid especial attention to rickets in its early stage. It was essentially a failure on the part of the system to assimilate the earthy salts, especially the salts of lime. It was a well-established fact that children might be born rachitic. It was not uncommon for the rachitic infant to appear well developed and robust during the first months of life, and, consequently, the true condition was often overlooked. Tetany and laryngismus stridulus were common symptoms. The utmost care should be observed to avoid confounding the early symptoms with those of simple bronchitis and gastro-enteric catarrh. Rickets, and its congener, scurvy of infancy, had been rapidly increasing recently, quite probably because of the extensive use of sterilized milk.

DR. S. KETCH, of New York, spoke of "The Local, Mechanical, and Constitutional Treatment." He said that one of the most important means in preventing deformity was the avoidance of injurious positions in the early stages of rachitis. Especially was this true in the stage of tenderness. The portative frames were useful in carrying out the postural treatment. Cautious manual pressure made daily was an important measure; climatic and hygienic treatment should not be forgotten, and the medicinal treatment should be adapted to the individual case. The ease with which the bones could be sprung toward their normal position should be the measure of the force to be employed. It should not be painful, but should be kept up for a number of minutes. It should be a cardinal rule that as long as the bones were in the stage of softening mechanical treatment should be persistently followed.

THIRD DAY—MAY 31ST.

DR. DE FOREST WILLARD, of Philadelphia, read a paper on "The Operative Treatment of Rachitic Deformities." He said that in manual correction of rachitic deformities, the pressure should be made momentarily and intelligently. He had never seen sloughing occur under these conditions. Straightening should take place before fracture, although "green-stick fracture" occasionally occurred. There was but little pain following the application of such force. In a number of instances in which he had compared forcible straightening and osteoclasis, he had found that the straightening was more pleasantly and more efficiently accomplished by forcible straightening, even in children of five or six years of age. Osteotomy, he considered the operation *par excellence* for rachitic deformities. He had seen suppuration occasionally follow the performance of cuneiform osteotomy, but in the other forms of osteotomy it had almost never occurred in his practice, and primary union was the rule. He preferred not to use an Esmarch bandage, for when there was a free flow of blood there was less likelihood of an inflow of air. It was true there was a slight mortality connected with osteotomy, yet he would like to see the statistics of the last few years, for he had observed no deaths and had heard of none. He did not believe a bone could be fractured with an osteoclast until all the soft tissues had been compressed and lacerated down to the periosteum; and, consequently, he considered osteotomy better than osteoclasis.

DR. WEIGEL said that with ordinary care and supervision after the operation, he considered either linear or cuneiform osteotomy perfectly safe, and preferable to osteoclasis. He had entirely discarded drainage.

DR. RYAN, of Cincinnati, thought the chief difference between osteoclasis and osteotomy was the difference between precision and uncertainty. He thought cunei-

form osteotomy had been practically abandoned except for the anterior curvatures of the tibia. He did not think osteotomy should be performed before the age of four or five years, as before this there was likely to be a recurrence of the deformity.

DR. GILLETTE said he had never done osteoclasis, because he had always felt that it lacked precision. He then detailed his experience with a case of osteotomy which had been followed by non-union.

DR. COOK said he had done a number of osteotomies, and had always sealed the wound. He had never seen any pus in any of these wounds.

DR. BARTOW, of Buffalo, said the fear of injuring the soft parts by osteoclasis appeared to him to be not well founded. With the osteoclast one could often make a green-stick fracture, and thus not only reduce the deformity, but obtain the benefit of the partial fixation offered by the bone itself.

DR. W. R. TOWNSEND, of New York, said he had seen one case in which Mr. Grattan had himself produced a laceration of the soft parts by the use of his osteoclast. As no special antiseptic precautions were taken in the preparation of the field of operation previous to doing osteoclasis, such slight lacerations might offer an entrance for septic germs.

DR. COOLIDGE said that Lorenz had effectually obviated this difficulty by the use of pads of very thick rubber.

DR. BARTOW said that he had avoided such lacerations by applying a piece of moleskin plaster at the point where the pads and girdles of his Rizzoli instrument were to make pressure.

DR. KETCH said he did not think any of these cases recovered without at least some simple manipulations. He would like to hear from the others about the "growing-out" theory.

DR. RYAN replied by detailing the history of four boys in a family under his constant observation, in whom these deformities had disappeared as the children had grown up.

DR. WILLARD said that he now seldom did cuneiform osteotomy, but when he did he left the wound open. When there was a very free effusion of blood it seemed that sufficient callus was not thrown out. This might explain the case of non-union reported by Dr. Gillette. Bad results were often due to the faulty application of dressings by inexperienced assistants. The most common mistake after osteotomy was in allowing the patients to go around without support. Some form of support should be worn for one year.

DR. J. C. SCHAPPS, of Brooklyn, read a paper entitled "Relief of the Spondylitic Spine from the Concussion of Walking." He said that to minimize the concussion of walking he had for about two years been using thick rubber heels, over half an inch thick. These should not be nailed, but stitched to the shoe.

DR. BERNARD BARTOW, of Buffalo, read a paper on "Elastic Traction in the Immediate Treatment of Club-foot." His method of employing elastic traction was modelled after that of Mr. Barwell. His object was to supplement tenotomy by grasping the anterior part of the foot, and abducting and twisting it more nearly into its normal relations. Over-correction was secured by elastic bands attached by adhesive plaster at the base of the little toe, and by a second plaster attached at the knee, and near the outer margin of the patella. The varus element yielded particularly well to this method.

DR. NEWTON M. SHAFFER made some remarks on the value of intermittent traction in general, and particularly its beneficial influence on the nutrition of the parts.

DR. W. E. WIRT, of Cleveland, O., read a paper entitled "Phelps' Method for the Cure of Club-foot in Adults." He reported three cases, ten, nineteen, and twelve years old, respectively, in which he had performed the operation of Phelps. He believed that tenotomy, the open incision and removal of the tarsal wedge, and sometimes the removal of the astragalus, would in most cases result in securing a useful foot. The skin in adults, and in some older children, would not stand the strain, and would slough.

DR. WEIGEL reported a case of double club-foot and double club-hand in which there was an extreme degree of deformity. In another case, that of a girl of twelve years, he had done Phelps' operation on one foot, and had removed the astragalus from the other foot. The latter gave a much better result. The trouble with Phelps' operation was that, with it, it was almost impossible to secure a complete correction of the varus.

DR. W. R. TOWNSEND said that the secret of Dr. Phelps' success in these severe cases was not in the open incision, but in the tremendous force which he used. The limitations of the operation were greater than had been supposed, for it was not indicated in very mild cases, and when there was retraction of the soft parts and extreme bony deformity, it was bound to fail.

DR. KETCH said that in cases in which the bony distortion exceeded the contraction of the soft parts, Phelps' operation was not a success.

DR. COOLIDGE, on behalf of DR. HALSTED MYERS, of New York, described a new method of operating on these cases. When it was necessary to remove one of the bones of the foot, Dr. Myers advised making a small incision over the bone, and scooping out with a Volkmann's spoon all the spongy tissue in the interior of the bone. Then, with comparatively little force, the foot could be brought into position.

The discussion on flat-foot was then resumed. DR. N. M. SHAFFER, of New York, spoke of the mechanism of the production of flat-foot, and illustrated his remarks with a mechanical model. There was, he said, practically no motion at the foot, and the center of motion of the ankle-joint passed transversely through the astragalus at about the outer malleolus. Motion of the ankle-joint took place on a remote axis. Looking at the model it could be seen that when the gastrocnemius was shortened, there would be a flattening of the plantar arch, and that if these tissues were weak this arch would give way. The calcaneous variety of club-foot was exactly the reverse of flat-foot. In order that flat-foot should be produced, the motion should be blocked at or near a right angle.

DR. S. L. MCCURDY, of Dennison, Col., remarked that he had made some experiments, and had found that for graceful motion an ankle-joint was unnecessary.

DR. WIRT said that the model was defective in that it represented one as walking with the foot perfectly flat.

DR. KETCH said he did not agree with Dr. Wirt that

each time the body advanced, the heel was raised to the extent of causing contraction of the gastrocnemius.

DR. BARTOW said he had always thought that the flattening of the arch preceded the shortening of the muscles.

DR. HENRY LING TAYLOR said that flat-foot was a disease of relaxation, and the shortenings were consequent upon the position.

DR. S. L. MCCURDY then described a new method of excising the knee-joint, the object of which was to avoid injury of the extensors and the muscular structures composing the hamstrings and flexors. This was accomplished by a peculiar method of sawing the bone, and by the use of a special retractor or guide.

DR. ANSEL G. COOK read a paper on "Fixation and Traction in the Treatment of Fractures into Joints." He expressed the opinion that early passive motion only disarranged the fragments of bone, increased the production of callus, irritated the injured ligaments, and by increasing the inflammation tended to produce ankylosis. Immobilization was useful only during the active stage of inflammation, or until the broken ligaments and bones had become united; hence immobilization in a case of fracture into a joint should be kept up from three to eight weeks, and then massage employed.

DR. RYAN said it was his practice in fractures of the elbow to begin daily passive motion about the sixteenth day.

DR. E. G. BRACKETT, of Boston, said he had often increased the amount of motion by resting the parts in splints after passive motion had been too early or too vigorously resorted to.

DR. W. R. TOWNSEND, of New York, read a paper on "Tuberculous Disease of the Shoulder-joint." He stated that at the Hospital for Ruptured and Crippled, among 3244 cases of tuberculosis of bones and joints, 21 were of the shoulder-joint, 11 being in males and 10 in females. The disease had appeared at an average age of ten years. In five of the cases there was tuberculous disease of other joints, but in every instance the shoulder had been the last to be affected. The primary lesion was more likely to be in the bronchial tubes or lungs than in the bones. The symptoms were pain, reflex spasm, atrophy, change of contour of the parts, loss of function, enlargement of axillary glands, shortening of the arm, and ankylosis. The reflex spasm was the most important, and was well marked in the deltoid on abduction of the arm. Ankylosis, partial or complete, was the common termination. The average duration was two or three years. The condition might be mistaken for rheumatic arthritis, dislocation of the humerus, or osteomyelitis of the upper portion of the humerus. The prognosis should be considered from the effect on the constitution, as well as locally. Most of the cases presented partial ankylosis when first seen. There were two methods of treatment—one, simple immobilization; and the other, traction, with portable apparatus. Excision had been held to be dangerous, but the statistics were gathered from operations in the pre-antiseptic period. The growth of the humerus was largely from the upper epiphysis, and hence, in early life the removal of the epiphysis would stop the growth of the arm. With partial excisions, the mortality should be very low. In adults the tendency to pulmonary complications was greater; hence the disease should be removed as early as possible in them, if possible by a partial operation. The best operation was the subperiosteal one of Ollier. In children partial operations were more likely to give good results than mechanical treatment. The paper included a detailed account of seven cases of ordinary shoulder-joint disease.

DR. KETCH said he saw no more reason for operating in tuberculous disease of the shoulder-joint in children than in tuberculous disease of the other joints.

DR. SHAFFER said that he had treated these cases with a simple extension-brace, and with very satisfactory results.

DR. RYAN saw no occasion for operating on these cases any more than other cases of tuberculous disease of joints. His experience with mechanical treatment had been favorable in this class of cases.

DR. JOHN RIDLON, of Chicago, said he had always found the mechanical treatment very satisfactory, although he had not obtained such good results with Dr. Shaffer's traction-brace. His treatment had consisted in fastening the arm to the body, supporting the hand with a halter, and applying adhesive straps so as to still further immobilize the shoulder.

DR. HENRY LING TAYLOR, of New York, read a paper on "Infantile Scorbutus." He said that at a recent discussion no less than seventy cases had been reported. The symptoms were a dusky pallor, emaciation, excessive peevishness, and general sensitiveness; exquisitely tender swellings without local heat near the joints of the lower extremities, due to sub-periosteal hemorrhage; inability to move the lower extremities and trunk; spongy or bleeding gums near the erupted teeth; and most significant of all, rapid improvement on a diet of fresh milk and orange-juice. The peri-articular swellings, he said, had been frequently mistaken for rheumatism. Last summer a baby of a year old that had been fed on condensed milk had been brought to him for a supposed spinal or hip affection. There was a spinal projection in the upper lumbar region, with rigidity, in addition to the usual symptoms of scurvy. The cachexia, the spongy and bleeding gums, the powerlessness of the legs, the exquisite sensitiveness and a swelling above the right ankle made the diagnosis clear. All the symptoms disappeared within three weeks after putting the child on pasteurized milk and orange-juice. Other cases have been mistaken for hip-disease, osteitis of the knee, and sarcoma of the knee, and infantile paralysis.

DR. JOHN RIDLON, of Chicago, was elected President for the ensuing year.

NEWS ITEMS.

The American Electro therapeutic Association will hold its fourth annual meeting at the New York Academy of Medicine, September 25, 26, and 27, 1894. The following program has been arranged:

President's Address: Dr. W. J. Herdman, of Ann Arbor, Mich.

The Report of the Committees.—On Standard Coils: Dr. W. J. Morton, of New York. On Standard Meters: Dr. Margaret A. Cleaves, of New York. On Standard Electro-static or Influence Machines: Dr. W. J. Mor-

ton, of New York. On Constant Current Generators and Controllers: Dr. W. J. Herdman, of Ann Arbor, Mich. On Standard Electrodes: Dr. A. Lapthorn Smith, of Montreal. Stand and Electrode for Static Electricity—Exhibit: Dr. Lucy Hall-Brown, of Brooklyn. On Electric Light as a Therapeutic and Diagnostic Agent: Dr. Margaret A. Cleaves, of New York.

The Constant Current.—Physics: "Current Distribution," Mr. W. J. Jenks, of New York. Physiological Effects: Prof. H. E. Dolbear, of Boston. Therapeutic Uses—General: Dr. A. D. Rockwell, of New York. Gynecologic: "The Galvanic Current in Catarrhal Affections of the Uterus," Dr. G. Betton Massey, of Philadelphia. Suites éloignées du Traitement électrique Conservateur Gynécologie. Grossesses consécutives: Dr. Georges Apostoli, of Paris. Metallic Electrolysis: M. le Docteur Georges Gautier, of Paris; Dr. W. J. Morton, of New York; Dr. Margaret A. Cleaves, of New York; Dr. A. H. Goelet, of New York. Treatment of Urethral Stricture: Dr. Robert Newman, of New York. Diseases of the Eye—Electro-Therapeutics: Dr. L. A. W. Alleman, of Brooklyn, N. Y. Notes on Goiter and Improvements in Apparatus for its Treatment: Dr. Charles H. Dickson, of Toronto. Diseases of the Throat: Dr. D. S. Campbell, of Detroit. The Action of Electricity on the Sympathetic: Dr. A. D. Rockwell, of New York. Diseases of the Nervous System: "The Treatment of Neuritis by the Galvanic and Faradic Currents," Dr. Landon Carter Gray, of New York. Electric Sanitation: Prof. John W. Langley, of Cleveland. Physics of the Electric Light in Relation to Organized Matter: Prof. John O. Reed, of Ann Arbor, Mich. Hydro-electric Methods: "Physics and Appliances," Mr. Newman Lawrence, of London. Special Hydro-electric Applications: Dr. Margaret A. Cleaves, of New York. The Hydro-electric Therapeutics of the Constant Current: Dr. W. S. Hedley, of Brighton, England.

Induction Currents.—Physiologic Effects: Dr. W. J. Engelmann, of St. Louis, Mo. Therapeutic Uses—General: "General Faradization," Dr. A. D. Rockwell, of NewYork; Dr. A. H. Goelet, of New York. Gynecologic: Dr. H. E. Hayd, of New York; Dr. A. Lapthorn Smith, of Montreal.

Sinusoidal Currents.—Physics: Mr. A. E. Kennelly, of Philadelphia. Physiologic Effects: Dr. W. J. Herdman, of Ann Arbor, Mich.; Dr. J. H. Kellogg, of Battle Creek, Mich. Therapeutic Uses: Dr. Margaret A. Cleaves, of New York; Dr. William James Morton, of New York; Dr. J. H. Kellogg, of Battle Creek, Mich.; Dr. Holford Walker, of Toronto; Dr. A. H. Goelet, of New York. Le Courants Alternatifs; leur Transformation; leur mesure et leurs Application thérapeutiques: M. le Docteurs Gautier et Larat, of Paris. On the Sinusoidal-Current Methods of Regulation, the E. M. F. and Resultant Current: Dr. Lucy Hall-Brown, of Brooklyn, N. Y.

Static and Static Induced.—Physics: Prof. Edwin J. Houston, of Philadelphia. Therapeutic Uses: "General Therapeutic Uses," Dr. William James Morton, of New York. The Treatment of Chorea: Dr. D. R. Brower, of Chicago. Static Induced: Dr. Margaret A. Cleaves, of New York. High Frequency Currents derived from Static Machines as per Method d'Arsonval: Dr. J. H. Kellogg, of Battle Creek, Mich.

In Memoriam.—Dr. Wm. F. Hutchinson, Providence, R. I., and Dr. John Chambers, Indianapolis, Ind. (Dr. Robert Newman, of New York); Dr. Plymon S. Hayes, Chicago (Dr. W. J. Herdman, of Ann Arbor, Mich.).

The American Association of Obstetricians and Gynecologists will hold its seventh annual meeting at Toronto, Ont., September 19, 20, and 21, 1894. The following preliminary program has been arranged: (1) President's Address, George H. Rohé, Catonsville, Md.; (2) Personal Experience with Pus Tubes: When to Operate, How to Operate, and the Results of Operation, Jas. F. W. Ross, Toronto, Ont.; (3) Relation of Hysteria to Structural Changes in the Uterus and Adnexa, A. P. Clarke, Cambridge, Mass.; (4) Demonstration of a Mechanism of Intussusception (Rabbits), Robert T. Morris, New York; (5) Nephrectomy, L. H. Dunning, Indianapolis; (6) Treatment of Distention of the Fallopian Tubes without Laparotomy and Removal, Frank A. Glasgow, St. Louis; (7) Hysteria in Pregnancy, W. P. Manton, Detroit, Mich.; (8) Relations of Renal Insufficiency to Operations, Carlton C. Frederick, Buffalo, N. Y.; (9) *a*, Importance of Recognizing Septic Puerperal Endometritis Early, and Its Treatment; *b*, Demonstration of a Portable Operating Table for Gynecological and Abdominal (Trendelenburg) Work, Edward J. Ill, Newark, N. J.; (10) Suspension of Retroflexed Uterus by the Utero-ovarian Ligaments, with Report of Cases, Reuben Peterson, Grand Rapids, Mich.; (11) The Element of Habit in Gynecic Disease, Geo. F. Hulbert, St. Louis; (12) Some Results of Ether-Anesthesia in Abdominal Operations, I. S. Stone, Washington, D. C.; (13) Report in Abdominal Surgery, Presenting Cases, A. Vander Veer, Albany; (14) Supplementary Paper on Abdominal Section in Intrapelvic Hemorrhage, M. Rosenwasser, Cleveland; (15) Conservative Midwifery, J. M. Duff, Pittsburg; (16) The Cause of the Thirst Following Abdominal Section, Eugene Boise, Grand Rapids, Mich.; (17) The Care of Pregnant Women, W. B. Dewees, Salina, Kan.; (18) Subject to be announced, L. S. McMurtry, Louisville, Ky.; (19) *Discussion*—Inflammatory Diseases of the Uterus and Appendages and of the Pelvic Peritoneum. (*a*) Introductory Remarks, William Warren Potter, Buffalo; (*b*) Historical Sketch, Edward J. Ill, Newark, N. J.; (*c*) Clinical History, Charles A. L. Reed, Cincinnati, O.; (*d*) Causation and Pathology, Lewis S. McMurtry, Louisville, Ky.; (*e*) Diagnosis and Prognosis, James F. W. Ross, Toronto, Can.; (*f*) Treatment, M. Rosenwasser, Cleveland, O.; A. Vander Veer, Albany, N. Y.; J. H. Carstens, Detroit, Mich.; A. H. Cordier, Kansas City, Mo.; (*g*) Results (a) When Treated; (b) Under Various Methods of Treatment, Joseph Price, Philadelphia, Pa.; (20) Intercurrent Typhoid Fever in Pregnancy, Thomas E. McArdle, Washington, D. C.; (21) Notes on a Case of Cholelithiasis, Frederick Blume, Allegheny, Pa.; (22) Perineal Operations, Joseph Price, Philadelphia.

The Cholera and the Plague.—It is reported that cases of cholera have appeared at Berlin and at Nantes. Four cases of cholera and three deaths have been reported at Adrianople. It is announced on competent authority that the epidemic prevailing in China is the bubonic plague, and of most malignant type.